

**Welcome**

**REBEL PIONEER CREATOR EXPLORER DEFENDER TRAILBLAZER**  
**PIONEER CREATOR EXPLORER DEFENDER TRAILBLAZER REBEL PIONEER CREATOR EXPLORER ADVENTURER**



**UNIVERSITY  
OF MANITOBA**



## Important Notice

The University of Manitoba reserves the right to make changes in the information contained in the *Undergraduate Calendar* and the *Graduate Calendar* without prior notice. The University of Manitoba web site, [umanitoba.ca](http://umanitoba.ca) is a source for updated information.

Not every course listed in the *Undergraduate Calendar* or the *Graduate Calendar* will be offered in this academic year.

It is the responsibility of all students:

- To familiarize themselves each year with the university's academic regulations and policy in general;
- To familiarize themselves with the regulations and policies applying specifically to their faculty, school, or program;
- To familiarize themselves with the specific graduation requirements of the degree, diploma, or certificate they are seeking; and
- To ensure that the courses they have selected are appropriate to their programs.

In the event of an inconsistency between the general academic regulations and policies published in the *Undergraduate Calendar* and the *Graduate Calendar*, and such regulations and policies established by Senate and the councils of the faculties and schools, the version established by Senate and the councils of the faculties and schools shall prevail.

The regulations and policies contained in this year's editions of the *Undergraduate Calendar* and the *Graduate Calendar* apply, subject to change, only for the academic year indicated on the cover page of each publication.

The material in the current editions of the *Undergraduate Calendar* and the *Graduate Calendar* was submitted by the academic and administrative units concerned. The university neither represents nor warrants that all general information and course references used in these publications is accurate although reasonable efforts have been used to check the accuracy of the information.

Students also agree by the act of registration to be bound by the regulations, policies, and bylaws of the University of Manitoba that are in effect at the time of registration, including any amendments which may be enacted during the period of their registration. Students agree by the act of registration to be bound by the regulations, policies, and bylaws of the faculty or program in which they have registered, including any amendments which may be made during the period of their registration. Students also acknowledge that such amendments may have retroactive application.

No liability shall be incurred by the University of Manitoba for any loss or damage suffered or incurred by any student, or any party claiming through or under any student, as a result

of delays in, or termination of, services, courses or classes by acts of God, fires, floods, riots, wars, strikes or lockouts, damage to university property, financial exigency, or any occurrence beyond the reasonable control of the university. Further, the University of Manitoba shall not be liable for any losses or damage suffered by a student who discloses his/her personal identification number (PIN) to anyone other than a university employee in the course of registration.

### **The Freedom of Information and Protection of Privacy Act (FIPPA)**

Personal information is collected under the authority of *The University of Manitoba Act*. It is used for the purposes of admission, registration, provision of education to the student including assessment of academic status, and communication with the student. It may be used for administrative research in support of provision of education and general administration of the University. It may be disclosed to other educational institutions, government departments, and co-sponsoring organizations, and, for those students who are members of UMSU, it will be disclosed to the University of Manitoba Students' Union. Upon graduation, the student's name and address, together with information on degrees, diplomas, and certificates earned, will be given to and maintained by the alumni records department in order to assist the University's advancement and development efforts. Information on graduation and awards may be made public. Personal information will not be used or disclosed for other purposes, unless permitted by *The Freedom of Information and Protection of Privacy Act*. Personal information is protected under the Protection of Privacy provisions of *The Freedom of Information and Protection of Privacy Act*. If you have any questions about the collection of your personal information, contact the Access & Privacy Office (204-474-9462 or 204-474-8339), 230 Elizabeth Dafoe Library, University of Manitoba, Winnipeg, Manitoba, Canada, R3T 2N2.

### **Disclosure of Personal Information to Statistics Canada**

Statistics Canada is the national statistical agency. As such, Statistics Canada carries out hundreds of surveys each year on a wide range of matters, including education.

It is essential to follow students across time and institutions to understand, for example, the factors affecting enrolment demand at post-secondary institutions. The increased emphasis on accountability for public investment means that it is also important to understand 'outcomes'. In order to carry out such studies, Statistics Canada asks all colleges and universities to provide data on students and graduates. Institutions collect and provide to Statistics Canada student identification information (student's name, student ID number, Social Insurance Number), student contact information (address and telephone number), student demographic characteristics, enrolment information, previous education, and labour force activity.

Under the Federal *Privacy Act*, individuals can request access to their own, individual information held in federal information banks, including those held by Statistics Canada.



The Federal *Statistics Act* provides the legal authority for Statistics Canada to obtain access to personal information held by educational institutions. The information may be used only for statistical purposes, and the confidentiality provisions of the *Statistics Act* prevent the information from being released in any way that would identify the student.

Students who do not wish to have their information used are able to ask Statistics Canada to remove their identifying information from the national database.

Further information on the use of this information can be obtained from Statistics Canada's web site: [www.statcan.gc.ca](http://www.statcan.gc.ca) or by writing to the Post-Secondary Section, Centre for Education Statistics, 17<sup>th</sup> Floor, R.H. Coats Building, Tunney's Pasture, Ottawa, Canada, K1A 0T6.

(Rev. Oct./08)

## About the University

**ONE University. MANY futures.**

## Organizational Structure

### Members of the Board of Governors

#### CHAIR

Janice Lederman, B.A., LL.B.

#### VICE-CHAIR

Patricia Bovey, B.A., FRSA

#### CHANCELLOR

Harvey Sexter, B.Comm, LL.B., LL.M., LL.D.

#### PRESIDENT AND VICE-CHANCELLOR

David T. Barnard, B.Sc., M.Sc., Ph.D (Toronto), Dip.C.S. (UBC)

#### APPOINTED BY THE LIEUTENANT-GOVERNOR-IN-COUNCIL

Aaron Berg, B.A. (Hons.), LL.B.

Patricia Bovey, B.A., FRSA

Evan Bowness

Mona Forsen, B.Comm. (Hons.), M.B.A

Janice Lederman, B.A., LL.B.

Michael Robertson, B.A., M.A., MAA, MRAIC

Ted Bock, B.A., LL.B.

Sharon Jasper, B.Ed.

Bev Passey, FRCGA

Emmet Collins, B.A. (Hon.)

#### ELECTED BY SENATE

Joanne Embree, M.D., FRCPC

Norman Halden, B.Sc. (Hons.), Ph.D.

Janet Hoskins, B.E.S., M.Sc., Ph.D.

#### ELECTED BY GRADUATES

Romel Dhalla, B.A., B.Comm. (Hons.)

Gwen Hatch, B.A., LL.B.

Rennie Zegalski, B.Comm. (Hons.)

#### ELECTED BY THE UNIVERSITY OF MANITOBA STUDENTS' UNION

Heather Laube, B.F.A.

Murat Ates

Meaghan Labine, B.Sc. (Hons.), M.Sc.(Hons.)

#### UNIVERSITY SECRETARY

Jeffrey M. Leclerc, B.Ed., M.Ed.

## Senior Administrative Officers

### President and Vice-Chancellor

David T. Barnard, B.Sc., M.Sc., Ph.D (Toronto), Dip.C.S. (UBC)



#### Vice-President (Academic) and Provost

Joanne C. Keselman, Ph.D.

#### Vice-President (Administration)

Deborah J. McCallum, B.Sc.

#### Vice-President (Research)

Digvir Jayas, Ph.D., P. Eng., P. Ag.

#### Vice-President (External)

John E. Kearsy, B.A.

#### University Secretary

Jeffrey M. Leclerc, B.Ed. M.Ed.

#### Vice-Provosts

Karen R. Grant, Ph.D.

David Collins, Ph.D.

Susan Gottheil, B.A. (Hons.), M.A.

#### Associate Vice-Presidents

John G. Alho, B.A. (Hons.), M.B.A.

Gary Glavin, Ph.D.

Janice Ristock, Ph.D.

Alan Simms, B.Comm. (Hons.), LL.B.

#### Director of Libraries

Karen Adams, B.A (Hons.), M.L.S.

#### Executive Director, Human Resources

Terry D. Voss, B.Comm. (Hons.), C.H.R.P.

#### Affiliated, Member and Constituent Colleges

About the University

#### St. Andrew's College

Acting Principal: Very Rev. Fr. Roman Bozyk, B.A., M.Div., M.A.

#### Universitairé de Saint-Boniface

Rectrice: Raymonde Gagné, B.A., Cert. Ed., M.B.A.

#### St. John's College

Warden: Janet A. Hoskins, B.E.S., M.Sc., Ph.D.

#### St. Paul's College

Rector: Denis Bracken, B.A., M.A., Ph.D.

#### Approved Teaching Centres

William and Catherine Booth College

Prairie Theatre Exchange

#### University Distinguished Professors

**Berkes**, F., B.Sc., Ph.D. (McGill); **Butler**, M., B.Sc.(Hons.)(Birm.), M.Sc.(Wat.), Ph.D. (King's College, London); **Chochinov**, H. M., O.M., M.D., Ph.D.(Man.), F.R.C.P.C., F.R.S.C., F.C.A.H.S.; **Degner**, L.F., B.N., M.A., Ph.D. (Michigan); **Friesen**, G., B.A. (Saskatchewan), M.A., Ph.D. (Toronto); **Gole**, A.M., B.Tech. (IIT Bombay), M.Sc., Ph.D.; **Hawthorne**, F.C., O.C., B.Sc. (Spec.) (Imperial College), A.R.S.M. (Royal School of Mines, London), Ph.D. (McMaster), F.R.S.C., F.G.A.C., F.M.S.A.; **Holley**, R.A., B.Sc., M.Sc. (McGill); Ph.D. (Guelph); **Jayas**, D.S., B.Sc. (G.B.Pant), M.Sc. (Manitoba), Ph.D. (Saskatchewan), P.Ag., P.Eng.; **Judd**, E.R., B.A. (Hons.)(Queen's), M.A., Ph.D. (Br.Col.), Diploma (Beijing Language Institute), Diploma (Fudan), F.R.S.C.; **McCance**, D.C., Cert. Ed., M.A., Ph.D. (Manitoba); **Oleszkiewicz**, J.A., M.Sc.(Wroclaw), M.Sc.(Vanderbilt), Ph.D., F.C.S.C.E.; **Page**, J.H., B.Sc.(Hons.)(Dal.), D.Phil.(Oxf.); **Perry**, R.P., B.A. (UBC), M.Sc., Ph.D. (Calgary); **Plummer**, F., B.Sc. (Hons.), M.D. (Manitoba), F.R.C.P.C.; **Roos**, L., A.B. (Stanford), Ph.D. (MIT); **Shafai**, L., B.Sc. (Tehran), M.Sc., Ph.D. (Toronto), F.R.S.C.; **Smil**, V., M.S. (Prague), Ph.D. (Pennsylvania State), F.R.S.C.; **Toles**, G., B.A., M.A., Ph.D. (Virginia); **Wolfart**, H.C., [B.A. equiv.] (Albert-Ludwigs-Universität, Freiburg im Breisgau), M.A. (Yale), M.A. (Cornell), M.Phil., Ph.D. (Yale), F.R.S.C.

#### Distinguished Professors Emeritus

**Anna**, T.E., B.A., M.A., Ph.D. (Duke), F.R.S.C.; **Anthonisen**, N.R., A.B. (Dartmouth), M.D. (Harvard), Ph.D. (McGill); **Chaturvedi**, M.C., B.Sc. (Met.) (Banara), M.Met.,



Ph.D. (Sheffield), P.Eng.; **Cohen**, H., B.Sc.(Hons.) (Manitoba), Sc.M. (Brown), Ph.D. (Minnesota); **Eales**, J.G., B.A.(Hons.) (Oxford), M.Sc., Ph.D. (UBC), F.R.S.C.; **Friesen**, H.G., O.C., B.Sc. (Med.), M.D. (Manitoba), D.Sc. (Western Ontario), F.R.C.P.(C), F.R.S.C.; **Gibson**, D., B.A., LL.B. (Manitoba), LL.M. (Harvard); **Klostermaier**, K.K., D.Phil. (Gregorian), Ph.D. (Bombay); **Kroetsch**, R.P., B.A. (Alberta), M.A. (Middlebury), P.S. (Iowa), F.R.S.C.; **Kwong**, J., B.A. (Hong Kong), M.Ed. (Alberta), Ph.D. (Toronto); **Martin**, G., B.A. (Colorado), M.A., Ph.D. (Arizona); **Ronald**, A.R., M.D., B.Sc., (Med.) (Manitoba); **Sehon**, A., B.Sc., M.Sc., Ph.D., D.Sc. (Manchester), F.R.S.C.; **van Oers**, W.T.H., Ph.D. (Amsterdam); **Younes**, M., Ch.B., D.P.H. (Egypt), F.R.C.P., Ph.D.

## Presidents Emeriti

**Naimark**, A., B.Sc. (Med.), M.D. (Manitoba), M.Sc., (M.), LL.D., F.R.C.P.C., F.R.S.C.

**Szathmáry**, E.J.E. C.M., O.M., B.A. (Hons.), Ph.D., LL.D. (Toronto), D.Sc. (Western Ontario), D. Litt.S. (St. Michael's College), LL.D. (York), LL.D. (McMaster), F.R.S.C.

## Chancellors and Presidents Emeriti

### Chancellors Emeriti

**Auld**, I.G., B.A.(Hons.); M.A.; LL.D.

**Mauro**, A.V., O.C., Q.C., B.A., LL.B., LL.M., LL.D. (Manitoba), D.Comm. (Lakehead)

**Norrie**, W., C.M, O.M., Q.C, B.A., LL.B., LL.D. (Manitoba), LL.D. (Winnipeg), D.P.M. (Manila)

## Faculties/Schools and Departments

**Note:** Codes for Faculties/Schools, Departments are shown in brackets.

### Faculties/Schools

Agricultural and Food Sciences (Faculty 07;  
School 24)

Architecture (09)

Art (15)  
Arts (01)

### Departments

Agribusiness and Ageconomics (061)

Animal Science (035)  
Biosystems Engineering (034)  
Entomology (038)  
Food Science (078)  
General Agriculture (065)  
Plant Science (039)  
Soil Science (040)  
Architecture (050)  
Architecture Interdisciplinary (166)  
City Planning (073)  
Environmental Design (079)  
Interior Design (051)  
Landscape Architecture (031)  
Fine Arts (054)  
Anthropology (076)  
Arts Interdisciplinary (099)  
Asian Studies (150)  
Canadian Studies (151)  
Catholic Studies (160)  
Central and East European Studies (099S)  
Classics (003)  
Economics (018)  
English, Film, and Theatre (004)  
French, Spanish and Italian (044)  
German and Slavic Studies (008)  
Global Political Economy (157)



	History (011)
	Icelandic (012)
	Judaic Studies (055)
	Labour Studies (153)
	Linguistics (126)
	Native Studies (032)
	Philosophy (015)
	Political Studies (019)
	Psychology (017)
	Religion (020)
	Sociology (077)
	Ukrainian Canadian Heritage Studies (155)
	Women's and Gender Studies (156)
Dental Hygiene (20)	Dental Hygiene (070)
Dentistry (17)	Dental Diagnostic and Surgical Sciences (103)
	Dentistry (066)
	Oral Biology (100)
	Preventive Dental Science (101)
Education (08)	Restorative Dentistry (102)
	Curriculum, Teaching and Learning (132)
	Educational Administration, Foundations and Psychology (129)
Engineering (03)	Education Ph.D. (124)
	Civil Engineering (023)
	Electrical and Computer Engineering (024)
	Engineering - Preliminary Year (130)
	Mechanical and Manufacturing (025)
	Engineering (025)
Environment, Earth, and Resources, Clayton H. Riddell (028)	Geological Sciences (007)
	Environment and Geography (128)
	Environment, Earth, and Resources (177)
	Resource Management (056)
Extended Education (26)	
Graduate Studies (016)	Disability Studies (162)
	Graduate Studies (069)
Human Ecology (04)	Mauro Centre for Peace Studies (170)
	Family Social Sciences (062)
	General Human Ecology (028)
	Health Studies (173)
	Human Nutritional Sciences (030)
	Textile Sciences (064)
Kinesiology and Recreation Management (22)	Kinesiology (171)
	Physical Education (057))
	Physical Education & Recreation Studies General (172)
	Recreation Studies (123)
Law (10)	Law (045)
Management, I. H. Asper School of Business (06)	Accounting and Finance (009)
	Actuarial Studies, Warren Centre (010)
	Business Administration (027)
	Interdisciplinary Management (098)
	Marketing (118)
	Supply Chain Management (164)
Medical Rehabilitation (19)	Medical Rehabilitation (068)
	Occupational Therapy (168)
	Physical Therapy (167)
	Respiratory Therapy (169)
Medicine (05)	Anaesthesia (096)
	Biochemistry and Medical Genetics (137)
	Community Health Sciences (093)
	Human Anatomy and Cell Science (080)
	Immunology (072)
	Interdisciplinary Medicine (165)
	Medical Education (888)
	Medical Microbiology (097)



	Medicine (083)
	Pathology (088)
	Pharmacology (089)
	Psychiatry (091)
	Physiology (090)
	Surgery (094)
Music, Marcel A. Desautels (21)	Music (033)
Nursing (13)	Nursing (049)
Pharmacy (11)	Pharmacy (046)
Science (02)	Biological Sciences (071)
	Chemistry (002)
	Computer Science (074)
	Mathematics (136)
	Microbiology (060)
	Physics and Astronomy (016)
	Statistics (005)
Social Work (12)	Social Work (047)
University 1 (27)	

## Alphabetical Listing of Subjects

Subject	Code	Faculty/School
Accounting	ACC	Management
Actuarial Studies Warren Centre	ACT	Management
Agribusiness and Ageconomics	ABIZ	Agricultural and Food Sciences
Agroecology	AGEC	Agricultural and Food Sciences
Agriculture	AGRI	Agricultural and Food Sciences
Agriculture Diploma	DAGR	Agricultural and Food Sciences
Anatomy	ANAT	Medicine
Anesthesia	ANES	Medicine
Animal Science	ANSC	Agricultural and Food Sciences
Anthropology	ANTH	Arts
Applied Mathematics	AMAT	Science
Arabic	ARA	Arts
Architecture	ARCG	Architecture
Architecture Interdisciplinary	ARCH	Architecture
Arts Interdisciplinary	ARTS	Arts
Asian Studies	ASIA	Arts
Biochemistry and Medical Genetics	BGEN	Medicine
Biological Sciences	BIOL	Science
Biosystems Engineering	BIOE	Agricultural and Food Sciences
Biotechnology	BTEC	Science
Canadian Studies	CDN	Arts
Catholic Studies	CATH	Arts
Chemistry	CHEM	Science
City Planning	CITY	Architecture
Civil Engineering	CIVL	Engineering
Classics	CLAS	Arts
Community Health Sciences	CHSC	Medicine
Computer Science	COMP	Science
Dental Diagnostic and Surgical	DDSS	Dentistry
Dental Hygiene	HYGN	Dental Hygiene
Dentistry	DENT	Dentistry
Diagnostic Cytology	CYTO	Medical Rehabilitation
Diploma in Agriculture	AGRI	Agricultural and Food Sciences
Disability Studies	DS	Disability Studies
Economics	ECON	Arts



Education Ph.D.	EDUC	Education
Educational Administration, Foundations and Psychology	EDUA	Education
Education: Curriculum, Teaching and Learning	EDUB	Education
Electrical Engineering	ECE	Engineering
Engineering - Preliminary Year	ENG	Engineering
English	ENGL	Arts
Subject	Code	Faculty/School
Entomology	ENTM	Agricultural and Food Sciences
Entrepreneurship/Small Business	ENTR	Management
Environment	ENVR	Environment, Earth, and Resources
Environment, Earth, and Resources	EER	Environment, Earth, and Resources
Environmental Architecture	EVAR	Architecture
Environmental Design	EVDS	Architecture
Environmental Interior Environment	EVIE	Architecture
Environmental Landscape and Urbanism	EVLU	Architecture
Family Social Sciences	FMLY	Human Ecology
Film Studies	FILM	Arts
Finance	FIN	Management
Fine Art General Courses	FA	Art
Fine Art Diploma	FNDP	Art
Fine Art: Art History	FAAH	Art
Fine Art Studio Courses	STDO	Art
Food Science	FOOD	Agricultural and Food Sciences
Forensic Sciences	FORS	Science
French	FREN	Arts
General Agriculture	AGRI	Agricultural and Food Sciences
General Human Ecology	HMEC	Human Ecology
General Management	GMGT	Management
Geography	GEOG	Environment, Earth, and Resources
Geological Sciences	GEOL	Environment, Earth, and Resources
German	GRMN	Arts
Global Political Economy	GPE	Arts
Graduate Studies	GRAD	Graduate Studies
Greek	GRK	Arts
Health Studies	HEAL	Human Ecology
Hebrew	HEB	Arts
History	HIST	Arts
Human Nutritional Sciences	HNSC	Human Ecology
Human Resources Management/Industrial Relations	HRIR	Management
Icelandic	ICEL	Arts
Immunology	IMMU	Medicine
Interdisciplinary Management	IDM	Management
Interdisciplinary Medicine	IMED	Medicine
Interior Design	IDES	Architecture
International Business	INTB	Management
Subject	Code	Faculty/School
Italian	ITLN	Arts
Judaic Studies	JUD	Arts
Kinesiology	KIN	Kinesiology and Recreation Management
Labour and Workplace Studies	LABR	Arts
Landscape Architecture	LARC	Architecture
Latin	LATN	Arts
Law	LAW	Law
Linguistics	LING	Arts
Management Information Systems	MIS	Management
Management Science	MSCI	Management
Marketing	MKT	Management
Mathematics	MATH	Science
Mechanical Engineering Graduate	MECG	Engineering



Mechanical Engineering Undergraduate  
Medical Microbiology  
Medical Rehabilitation  
Medicine  
Microbiology  
Music  
Native Studies  
Nursing  
Occupational Therapy  
Operations Management  
Oral Biology  
Pathology  
Peace Studies  
Pharmacology  
Pharmacy  
Philosophy  
Physical Education

Physical Education and

Recreation Studies General  
Physical Therapy

Subject  
Physics and Astronomy  
Physiology  
Plant Science

Polish  
Political Studies  
Post Graduate Medical Education  
Preventive Dental Science  
Psychiatry  
Psychology  
Recreation

Religion  
Resource Management

Respiratory Therapy  
Restorative Dentistry  
Russian  
Semitic Languages and Literature  
Slavic Studies  
Social Work  
Sociology  
Soil Science

Spanish  
Statistics  
Supply Chain Management  
Surgery  
Textile Sciences  
Theatre  
Ukrainian  
Ukrainian Cdn. Heritage  
Undergraduate Medical Education  
Women's Studies  
Yiddish

MECH Engineering  
MMIC Medicine  
REHB Medical Rehabilitation  
MED Medicine  
MBIO Science  
MUSC Music  
NATV Arts  
NURS Nursing  
OT Medical Rehabilitation  
OPM Management  
ORLB Dentistry  
PATH Medicine  
PEAC Graduate Studies  
PHAC Medicine  
PHRM Pharmacy  
PHIL Arts  
PHED Kinesiology and Recreation  
Management  
PERS Kinesiology and Recreation  
Management

PT Medical Rehabilitation

Code Faculty/School  
PHYS Science  
PHGY Medicine  
PLNT Agricultural and Food  
Sciences  
POL Arts  
POLS Arts  
PGME Medicine  
PDSO Dentistry  
PCTY Medicine  
PSYC Arts  
REC Kinesiology and Recreation  
Management  
RLGN Arts  
NRI Environment, Earth, and  
Resources  
RESP Medical Rehabilitation  
RSTD Dentistry  
RUSN Arts  
SEM Arts  
SLAV Arts  
SWRK Social Work  
SOC Arts  
SOIL Agricultural and Food  
Sciences  
SPAN Arts  
STAT Science  
SCM Management  
SURG Medicine  
TXSC Human Ecology  
THTR Arts  
UKRN Arts  
UCHS Arts  
UGME Medicine  
WOMN Arts  
YDSH Arts



## Academic Schedule

### Section 1: Orientation Sessions for Fall/Winter Session

IDDP Year 1	May-June 2012
University 1	Sept. 4-5, 2012
Agriculture Diploma	Sept. 12, 2012
Faculty of Agriculture & Food Sciences Year 1 orientation	Sept. 5, 2012
School of Art Orientation	Sept. 4-5, 2012
Asper School of Business, Year 1 student welcome luncheon	Sept. 4, 2012
Asper School of Business, Year 1 CSA orientation and Barbeque	Sept. 5, 2012
Education, Year 1	Sept. 5, 2012
Education, Year 2 and Year 5 Integrated	Aug. 30, 2012
Human Ecology, Information Session	Sept. 5, 2012
Medicine Inaugural Exercises	Aug. 22, 2012
Music	Sept. 4, 2012
Nursing, Year 2 (2180 )	
Tuesday/Wednesday clinical orientation	Sept. 4, 2012
Nursing, Year 2 (2190)	
Tuesday/Wednesday clinical orientation	Sept. 4, 2012
Nursing, Year 2 (2180)	
Thursday/Friday clinical orientation	Sept. 5, 2012
Nursing, Year 2 (2190)	
Thursday/Friday clinical orientation	Sept. 5, 2012
Nursing, Year 2 (2180 continues)	
Tuesday/Wednesday clinical orientation continues	Sept. 11, 2012
Nursing, Year 2 (2180 continues )	
Thursday/Friday clinical orientation continues	Sept. 6, 2012
Nursing, Year 2 (2190 continues)	
Both rotations clinical orientation continues	Sept. 6, 2012
Nursing, Year 2 (2180 and/or 2190)	
Tuesday/Wednesday clinical begins	Sept. 11, 2012
Nursing, Year 2 (2180 and/or 2190)	
Thursday/Friday clinical begins	Sept. 6, 2012
Nursing, Year 3 clinical orientation	
Tuesday/Wednesday clinical rotation begins	Sept. 25, 2012
Nursing, Year 3 clinical orientation	
Thursday/Friday clinical rotation begins	Sept. 27, 2012



Nursing, Year 4 4270 clinical orientation	Sept. 6, 2012
Nursing Lectures in NURS 2120 (Health Assessment) and Nursing labs in NURS 2120 (Health Assessment) and NURS 2130 (Skills Year2), NURS 3280 (Skills Year 3) start week of Sept. 10, 2012	
NOTE: Immunizations/CPR due for all newly admitted Nursing students. Criminal Record Check/Child Abuse Registry/Immunizations/CPR due for all newly admitted Nursing students.	Aug. 1, 2012
Occupational Therapy, Year 1 orientation session	Aug. 23 - 24, 2012
Pharmacy, Year 1 orientation session	Sept. 5, 2012
Social Work, Year 1	Sept. 5, 2012
Social Work, Year 2 and 3 Field Orientation	Sept. 4 and 5, 2012

## Section 2: Start and End Dates for Fall/Winter Session

(Classes, practica, experiences)

The following start and end dates are for students in most faculties and schools.

See Section 5 for mid term break and other university closures.

Students registering for Distance and Online Education courses should consult the web site [www.umanitoba.ca/distance](http://www.umanitoba.ca/distance) for further information.

**Education courses may have unique start and end dates. Students are referred to the Aurora Student Class Schedule**

Fall Term 2012 (including spanned courses)	Start	End
Most faculties and schools	Sept. 6, 2012	Dec. 5, 2012
Agriculture diploma	Sept. 17, 2012	Nov. 30, 2012
Dentistry, Years 1 and 2	Aug. 13, 2012	Nov. 30, 2012
Dentistry, Year 3	Aug. 7, 2012	Nov. 30, 2012
Clinics	T.B.A.	Dec. 7, 2012
Dentistry, Year 4	Aug. 7, 2012	Dec. 7, 2012
Clinics	T.B.A.	Dec. 14, 2012
Dental Hygiene, Year 2	Aug. 20, 2012	Nov. 30, 2012
Dental Hygiene, Year 3	Aug. 13, 2012	Nov. 30, 2012
Clinics	T.B.A.	Dec. 7, 2012
Law	Sept. 4, 2012	Dec. 4, 2012
Medicine, Years 1	Aug. 21, 2012	Dec. 18, 2012
Medicine, Years 2	Aug. 27, 2012	Dec. 18, 2012
Medicine, Years 3	Aug. 27, 2012	Dec. 18, 2012
Medicine, Years 4	Aug. 27, 2012	Dec. 21, 2012
Occupational Therapy Year 1	Aug. 27, 2012	Nov. 16, 2012
Basic Fieldwork	Nov. 19, 2012	Dec. 14, 2012
Occupational Therapy Year 2	Aug. 27, 2012	Dec. 14, 2012
Pharmacy, Year 4 (classes)	Sept. 4, 2012	Oct. 29, 2012



(SPEP 4 - Block 1)	Nov. 5, 2012	Dec. 14, 2012
(Electives - Block 1)	Nov. 5, 2012	Dec. 21, 2012
Physical Therapy (M.P.T.), Year 1	Aug. 20, 2012	Dec. 19, 2012
Physical Therapy (U.G.), Year 3	Aug. 27, 2012	Dec. 14, 2012
Respiratory Therapy, Years 1 and 2	Aug. 27, 2012	Dec. 14, 2012
Respiratory Therapy, Year 3	Aug. 20, 2012	Dec. 21, 2012
Social Work, Field Instruction Years 2 & 3	Sept. 4, 2012	Dec. 7, 2012
<b>Winter Term 2013 (including spanned courses)</b>	Start	End
Most faculties and schools	Jan. 7, 2013	April 10, 2013
Agriculture Diploma	Jan. 7, 2013	Mar. 28, 2013
Dental Hygiene, Years 2 and 3 classes	Jan. 7, 2013	April 5, 2013
Year 2 clinic	Jan. 7, 2013	April 5, 2013
Year 3 clinic	Jan. 7, 2013	April 19, 2013
Dentistry, Years 1, 2 and 3		
classes and clinics	Jan. 7, 2013	May 3, 2013
Dentistry, Year 4 classes	Jan. 7, 2013	Jan. 11, 2013
Year 4 clinics	Jan. 7, 2013	April 26, 2013
Law	Jan. 7, 2013	April 12, 2013
Medicine, Years 1 and 2	Jan. 3, 2013	May 24, 2013
Medicine, Year 3	Jan. 3, 2013	Aug. 23, 2013
Medicine, Year 4	Jan. 3, 2013	May 16, 2013
Occupational Therapy Year 1	Jan. 7, 2013	May 3, 2013
Occupational Therapy Year 2		
Intermediate Fieldwork 2	Jan. 7, 2013	Mar. 1, 2013
Occupational Therapy Year 2	Mar. 11, 2013	June 28, 2013
Pharmacy, Year 3 (classes)	Jan. 3, 2013	Mar. 22, 2013
Pharmacy, Year 2, SPEP 2	May 6, 2013	May 17, 2013
Pharmacy, Year 3 SPEP 3	April 8, 2013	May 3, 2013
Pharmacy, Year 4,		
(SPEP 4 - Block 2)	Jan. 7, 2013	Feb. 15, 2013
(Electives - Block 2)	Jan. 7, 2013	Feb. 22, 2013
(SPEP 4 - Block 3)	Feb. 25, 2013	Apr. 5, 2013
(Electives - Block 3)	Feb. 25, 2013	April 12, 2013
Physical Therapy (M.P.T.)- Year1	Jan. 4, 2013	variable; depends on clinical placements
Physical Therapy (U.G.)- Year 3	Jan. 7, 2013	variable; depends on clinical placements
Respiratory Therapy Years 1 and 2	Jan. 7, 2013	April 26, 2013
Respiratory Therapy Year 3 Clinical	Jan. 7, 2013	May 31, 2013
Social Work Years 2 and 3 field instruction	Jan. 7, 2013	April 19, 2013



### Section 3: Registration and Withdrawal Dates

NOTE:

1. The refund schedule will be published on the Registrar's Office web site in July 2012.

2. Some courses have irregular Voluntary Withdrawal deadline dates. Please refer to your faculty or school section of the Calendar or the Aurora Student Class Schedule.

Fall Term 2012 (including spanned courses)	Start	End
Nursing Clinical Courses: last date to register for Fall Term 2012 and Winter Term 2013	Aug. 15, 2012	
Last Date to register and pay fees without (penalty for all programs (except Agriculture Diploma)	Sept. 5, 2012	
Agriculture Diploma	Sept. 14, 2012	
Law: Registration Revision only until Sept. 14,2012	Sept. 4, 2012	
Registration revisions and late registration in all programs (except Agriculture Diploma and irregularly scheduled courses). A financial penalty is assessed on all late registrations during this period	Sept. 6, 2012	Sept. 19, 2012
Agriculture Diploma	Sept. 17, 2012	Sept. 26, 2012
Last date in all programs (except Agriculture Diploma and irregularly scheduled courses) to withdraw from Fall Term 2012 and full courses and not be assessed a "VW"		Sept. 19, 2012
Agriculture Diploma		Sept. 26, 2012
Last date for Voluntary Withdrawal from Fall Term 2012 courses without academic penalty in all faculties and schools. (see refund schedule, published on the Registrar's Office web site in July 2012, for financial implications) (For a refund schedule, please check the Registrar's Office website after July 1, 2012.)		Nov. 14, 2012
<b>Winter Term 2013</b>		
Registration and Revision period in Winter Term 2013 half courses in all programs (except irregularly scheduled courses)	Jan. 7, 2013	Jan. 18, 2013
Last date for registration in Winter Term 2013 half courses, including Challenge for Credit, and/or registration revisions in all programs (except irregularly scheduled courses)		Jan. 18, 2013
Law: Registration Revision only until Jan. 16,2013		Jan. 16, 2013
Winter Term 2013 half courses dropped after this date from any program (except irregularly scheduled courses) are recorded as Voluntary Withdrawals		Jan. 18, 2013
Last date for Voluntary Withdrawal from Winter Term 2013 half courses and full courses without academic penalty in all faculties and schools (except Agriculture Diploma). (see refund schedule, published on the Registrar's Office web site in July 2012, for financial implications) (For a refund schedule, please check the Registrar's Office website after July 1, 2012.)		Mar. 20, 2013
Agriculture Diploma		Mar. 12, 2013

### Section 4: Fee Deadlines



Last date for all students to pay Fall Term 2012 and 1st instalment fees without late fee (except Agriculture Diploma)	Sept. 5, 2012
Agriculture Diploma	Sept. 14, 2012
Last date for all students to pay Winter Term 2013 and 2nd instalment fees without late fee	Jan. 7, 2013

## Section 5: Dates of University Closure and Mid Term Break

When the University is closed no classes/ examinations will be held.	Start	End
Canada Day (Holiday Observed)	July 2, 2012	
Civic Holiday	Aug. 6, 2012	
Labour Day	Sept. 3, 2012	
Thanksgiving Day	Oct. 8, 2012	
Remembrance Day (Holiday Observed)	Nov. 12, 2012	
December Holidays	Dec. 22, 2012	Jan. 2, 2013
Mid-Term Break* for all faculties and schools (except Medicine, Dentistry, Education, Occupational Therapy and Respiratory Therapy Yr. 3)	Feb. 18, 2013	Feb. 22, 2013
Louis Riel Day	Feb. 18, 2013	
Dentistry break	Feb. 25, 2013	Mar. 1, 2013
Occupational Therapy break	Mar. 4, 2013	Mar. 8, 2013
Medicine Years 1 and 2 break	Mar. 18, 2013	Mar. 22, 2013
Good Friday	Mar. 29, 2013	
Physical Therapy, Year 1 break	Apr. 1, 2013	Apr. 5, 2013
Victoria Day	May 20, 2013	
*The academic and administrative offices will be open during this period, but there will be no classes/examinations held for students		

## Section 6: Fall/Winter Session Examination and Test Dates

Students are reminded that they must remain available until all examination and test obligations have been fulfilled.

Fall/Winter Session 2012-2013		
Fall Term 2012 (including spanned courses)	Start	End
Most faculties and schools	Dec. 7, 2012	Dec. 19, 2012
Agriculture Diploma*	Dec. 3, 2012	Dec. 10, 2012
Dentistry, Years 1, 2, and 3	Dec. 3, 2012	Dec. 14, 2012
Dentistry, Year 4	Dec. 10, 2013	Dec. 14, 2012
Dental Hygiene Year 1	Dec. 3, 2012	Dec. 14, 2012
Dental Hygiene Year 2	Dec. 10, 2012	Dec. 14, 2012
Law	Dec. 5, 2012	Dec. 19, 2012
Pharmacy, Year 4	Oct. 30, 2012	Oct. 31, 2012



<b>Winter Term 2013 (including spanned courses)</b>		
Most faculties and schools	April 12, 2013	April 26, 2013
Agriculture Diploma	April 1, 2013	April 8, 2013
Dental Hygiene, Years 1 and 2	April 8, 2013	April 12, 2013
Dentistry, Years 1, 2 and 3	May 6, 2013	May 17, 2013
Year 4	Jan. 14, 2013	Jan. 18, 2013
Law	April 15, 2013	April 29, 2013
Pharmacy, Year 3	Mar. 28, 2013	April 4, 2013
Respiratory Therapy		
Composite Exam Year 3	June 17, 2013	

## Section 7: Challenge for Credit, Supplemental and Other Special

### Examinations and Tests

Faculties and schools that extend supplemental examination privileges: last date for applications for autumn supplemental examinations	July 2, 2012
Language reading tests for graduate students	Sept. 1, 2012
Last date to apply for Challenge for Credit for courses offered in Fall Term 2012	Sept. 19, 2012
International Dental Degree Program on-site assessment	TBA
Last date to apply for Challenge for Credit for courses offered in Winter Term 2013	Jan. 18, 2013
Agriculture Diploma Last date for applications for Fall Term 2012 supplemental examinations	Jan. 7, 2013
Fall term supplementary examinations	Jan. 9, 2013
Language reading tests for graduate students	Mar. 30, 2013
Agriculture Diploma Last date for applications for Winter Term 2013 (supplemental examinations - graduating students)	April 16, 2013
Winter Term supplementary examinations- graduating students	April 19, 2013
Last date for applications for Winter Term 2013 (supplemental examinations - non-graduating students)	May 28, 2013
Winter Term supplementary examinations- non-graduating students	June 3, 2013
Last day to register for Challenge for Credit for examinations in June series	April 26, 2013
Medical Council of Canada examinations	April 29 - May 7, 2013

## Section 8: Grade Appeal Dates

Appeal period for final grades received for Fall Term 2012 courses	Jan. 7, 2013	Jan. 25, 2013
Appeal period for final grades received for	May 21, 2013	June 10, 2013



Winter Term 2013 courses and full courses

## Section 9: University Convocation

Fall Convocation	Oct. 17 - 18, 2012
Last date to apply online to graduate in October	July 26, 2012
Last date to apply online to graduate in February	Sept. 19, 2012
Last date to apply online to graduate in May	Jan. 18, 2013
Graduation date for students graduating in February 2013 (Ceremony for February grads is in May 2013)	Feb. 6, 2013
School of Agriculture Convocation ceremony	April 26, 2013
Faculty of Medicine Convocation ceremony	May 16, 2013
Spring Convocation	May 28 - May 30, 2013
Université de Saint-Boniface Convocation ceremony	June 3, 2013

## Section 10: Other University Special Events

Parents Orientation	June 2, 2012
2012 School Counsellors Admissions Seminar	Sept. 2012
Enrolment Services/Student Recruitment: Evening of Excellence	Oct. 2012
Memorial events for 14 women murdered at l'Ecole Polytechnique in 1989	Dec. 6, 2012
Information Days for high school students	Feb. 20-21, 2013
Annual traditional graduation Powwow in honour of Aboriginal students	May 4, 2013

## Section 11: Distance & Online Education 2013/13 Deadline Dates

Start and End Dates	Start	End
Fall term 2012 (including spanned courses)	Refer to Section 2 for start & end dates	
Winter Term 2013	Refer to Section 2 for start & end dates	
Winter/Summer Term 2013	Jan. 7, 2013	July 5, 2013
Summer Term 2013	May 6, 2013	Aug. 2, 2013
Registration and Withdrawal Dates		
Fall Term 2012 (including spanned courses)	Refer to Section 3 for registration & withdrawal dates	
Winter Term 2013	Refer to Section 3 for registration & withdrawal dates	
Winter/Summer Term 2013	Start	End
Registration and Revision period	Jan. 7, 2013	Jan. 18, 2013



Last date for Voluntary Withdrawal		June 7, 2013
<b>Summer Term 2013</b>		
Registration and Revision period	May 6, 2013	May 17, 2013
Last date for Voluntary Withdrawal		July 12, 2013
<b>Application to write examinations at a location other than the University of Manitoba</b>		
Fall term 2012	First working day of October	
Fall/Winter and Winter term 2013	First working day of February	
Winter/Summer term 2013	First working day of May	
Summer term 2013	First working day of June	
<b>Examination and Test Dates</b>		
Fall Term 2012	Refer to Section 6 for examination and test dates	
Winter Term 2013	Refer to Section 6 for examination and test dates	
Winter/Summer term 2013	July 8, 9 & 10, 2013	
Summer Term 2013	Aug. 6 - 9 & 12, 2013	

## Section 12: Summer Session 2012 Start and End Dates

For more detailed information, please consult the Summer Session Calendar available from the Summer Session Office, 166 Extended Education Complex. The Summer Session Calendar is available on-line at [umanitoba.ca/summer](http://umanitoba.ca/summer).

May Day, June Day, May-June Day	Start	End
Classes	April 30, 2012	June 19, 2012
<b>Examinations</b>		
May Day	May 25, 2012	May 26, 2012
June Day & May-June Day	June 21, 2012	June 22, 2012
<b>May-June Eve, June-Aug. Eve, May-Aug. Eve</b>		
Classes	April 30, 2012	Aug. 8, 2012
<b>Examinations</b>		
May-June Eve	June 15, 2012	June 16, 2012
June-Aug Eve & May-Aug Eve	Aug. 9, 2012	Aug. 10, 2012
<b>July Day, Aug. Day, July-Aug. Day</b>		
Classes	June 25, 2012	Aug. 15, 2012
<b>Examinations</b>		
July Day	July 20, 2012	July 21, 2012
Aug. Day & July-Aug. Day	Aug. 17, 2012	Aug. 18, 2012
<b>Other</b>		
Medicine, B.Sc.	May 28, 2012	Aug. 24, 2012
Nursing Summer Term	April 23, 2012	July 25, 2012
Occupational Therapy Year 1 Summer Term		
Intermediate Fieldwork 1	May 7, 2012	June 29, 2012
Occupational Therapy Year 2 Summer Term		
Advanced Fieldwork	July 3, 2012 (flexible start date)	must end by Sept. 14, 2012
Physical Therapy Summer Term	variable; depends on clinical placements	



### Section 13: Summer Session 2013

<b>Class Start Dates</b>	
Nursing summer term begins	April 22, 2013
Summer Session Start Date	May 6, 2013
Medicine B.Sc.	May 27,2013 - Aug. 23,2013
Occupational Therapy Year 1 Summer Term	
Intermediate Fieldwork 1	May 6,2013 - June 28,2013
Occupational Therapy Year 2 Summer Term	
Advanced Fieldwork	July 2, 2013 - must end by flex. start date Sept.13,2013
Physical Therapy Summer Term	variable; depends on clinical placements
Respiratory Therapy, Year 2	April 29,2013 - June 28,2013
The other summer session dates are not available yet.	

### Section 14: Faculty of Graduate Studies Submission Dates

For reports on theses/practica (and the corrected copies of the theses/practica), comprehensive examinations and M.Eng. projects to be submitted to Graduate Studies by students expecting to graduate in October	Aug. 23, 2012
For receipt, in Graduate Studies Office, of Ph.D. theses (for distribution) from graduate students expecting to graduate in February	Oct. 2, 2012
For distribution of Master's theses/practica (to examining committee) by students expecting to graduate in February	Oct. 15, 2012
For reports on theses/practica (and the corrected copies of theses/practica), comprehensive examinations and M.Eng. projects to be submitted to Graduate Studies by students expecting to graduate in February.	Jan. 3, 2013
For receipt, in Graduate Studies Office, of Ph.D. theses (for distribution) from graduate students expecting to graduate in May.	Jan. 14, 2013
For distribution of Master's theses/practica (to examining committee) by students expecting to graduate in May	Jan. 21, 2013
For reports on theses/practica (and the corrected copies of theses/practica), comprehensive examinations and M.Eng. projects to be submitted to Graduate Studies by students expecting to graduate in May	April 3, 2013
For receipt, by the Faculty of Graduate Studies, of Progress Reports for Master's and Ph.D. students	June 15, 2013
For receipt, in Graduate Studies Office, of Ph.D. theses (for distribution) from students expecting to graduate in October	June 10, 2013
For distribution of Master's theses/practica (to examining committee) by students expecting to graduate in October	June 17, 2013
For reports on theses/practica (and the corrected copies of the theses/practica), comprehensive examinations and M.Eng. projects to be submitted to Graduate Studies by students expecting to graduate in October	Aug.22, 2013



## University Policies

### **SECTION 1: Policy on the Responsibilities of Academic Staff with Regard to Students**

#### **I Objectives,**

The objectives of this policy are to identify the responsibilities of academic staff with regard to students; to promote harmonious relations between academic staff and students; and to promote fair and equitable treatment of students.

#### **II Definitions,**

For purposes of this document, the following terms shall be defined as provided by this article:

1. Academic staff shall include all individuals holding full- or part-time appointments at the rank of Instructor I, Instructor II, senior instructor, lecturer, assistant professor, associate professor or professor. The term shall include also academic administrators, academic librarians, counsellors, adjunct professors, professional associates, research associates, research assistants, student research assistants, and student teaching assistants, insofar as such persons perform duties within the ambit of the policy.

2. Student shall mean any person who is registered as a student in the university.

#### **III Statement of Responsibilities,**

Some of the responsibilities of academic staff with regard to students rest with the individual staff member, while others are collective responsibilities, to be exercised through the actions of department and faculty/school administrators and councils.

#### **A. Individual Responsibilities**

The individual responsibilities of academic staff members with regard to students are primarily instructional and scholarly, and secondarily administrative. They may include:

1. Undergraduate, graduate, and continuing education instruction, including the organization, preparation and delivery of course material, the evaluation of student academic progress, the reporting of such evaluation in accordance with approved policies and schedules, consultation with students out of class or laboratory hours, and supervision of student research and thesis preparation;

2. Scholarly attainment through personal study and research, including study for purposes of academic self-improvement or course improvement, keeping abreast of new developments, and research that leads to a useful or original contribution toward the advancement of knowledge and understanding; and,

3. Administrative work as required for instructional and scholarly activities, including committee work at various levels - departmental, faculty, university - as it pertains directly or indirectly to students.

#### **B. Collective Responsibilities**

The collective responsibilities of the academic staff belonging to an academic unit are to provide an effective learning environment and to endeavour to ensure fair and consistent treatment of students. They include:

1. Periodically reviewing and updating all courses and programs;

2. Ensuring that academic regulations and policies provide for fair and consistent treatment of students; and,

3. Providing for convenient student access to information on policies, regulations and procedures that may affect their academic progress, including the provision of names of instructors assigned to teach particular courses and sections at the earliest possible opportunity.

#### **IV Discharge of Responsibilities ,**

##### **A. Individual Responsibilities**

1. Academic staff members shall discharge their instructional responsibilities with academic integrity, scholarly competence, and pedagogic effectiveness.

2. Academic staff members shall maintain their familiarity with current university faculty/school and/or department policies regarding plagiarism and cheating, examination impersonations, student access to final examination scripts, student discipline, grade appeals, and the University policy regarding sexual harassment.

3. In discharging their instructional responsibilities, academic staff members shall adhere to regulations pertaining to the format, content and conduct of courses and laboratories, including regulations pertaining to examinations, term work, grades, and related matters.

4. A course outline or syllabus shall be provided in each course section, within the first week of classes:

a) The academic staff member responsible for that section shall provide in writing to every member of the class:

- name of instructor;
- office number and telephone number;
- a list of textbooks, materials and readings that the student is required to obtain including the appropriate referencing style guide(s) acceptable to the instructor and/or discipline in courses where it is relevant;
- an outline of the topics to be covered;



- a description of the evaluation procedure to be used, including the weighting of the components that will contribute to the final grade and whether evaluative feedback will be given to the student prior to the voluntary withdrawal date (see note);
- an indication of instructor availability for individual student consultation;
- a tentative schedule of term assignments and tests; and
- a statement of the practice to be following regarding late submission of assignments.

**NOTE:** It is understood by Senate that the provision of this information is not intended to affect the question of equity in multi-sectioned courses in any way.

b) The academic staff member shall provide in writing to every member of the class information regarding academic integrity which shall include:

- a reference to statements on academic dishonesty including "plagiarism and cheating" and "examination personation" found in the University General Calendar; and,
- where appropriate, a reference to specific course requirements for individual work and group work. Students should be made aware that group projects are subject to the rules of academic dishonesty and that group members must ensure that a group project adheres to the principles of academic integrity. Students should also be made aware of any specific instructions concerning study groups and individual assignments. The limits of collaboration on assignments should be defined as explicitly as possible.

5. Academic staff members shall teach their courses with due regard to calendar descriptions.

6. It is the responsibility of academic staff members to specify textbooks and materials in accordance with announced purchasing deadlines.

7. In their dealings with students, academic staff shall:

- a) not deny registration for instruction in those courses for which the permission of the instructor is required, except where the student lacks appropriate qualifications or where an approved policy on limited enrolment is in effect;
- b) comply with existing human rights legislation, and refrain from differential treatment of individual students on the basis of their actual or presumed membership in, or association with, some class or group of persons;
- c) not accept money or other goods or services from students for assistance with any course offered by the University. This clause, however, shall not prevent student teaching assistants or other part-time instructors from

accepting payment for tutoring in courses/sections which do not fall within the scope of their University employment;

d) be available for a reasonable amount of time, on a known and posted basis, for individual consultation with students registered in their courses or laboratories;

e) evaluate student academic performance in a fair and reasonable manner, and by means of appropriate academic criteria only;

f) where appropriate, provide written evaluative feedback prior to the voluntary withdrawal deadlines specified in the General Calendar;

g) foster a free exchange of ideas between themselves and their students in the classroom and allow students the freedom to take legitimate exception to the data, views, or methods presented;

h) respect the confidentiality of documentary information about students;

i) keep confidential any information about the academic performance of a student, unless release is authorized by the student, required by his/her instructional team, or requested by an administrative officer in accordance with the University policy on the release of information;

j) explicitly acknowledge in written or oral presentations any indebtedness to student research or assistance;

k) not obtain any improper personal advantage from a student or student work; and,

l) academic staff members shall not retaliate against a student who has filed a complaint, whether the complaint was substantiated or unsubstantiated.

8. Academic staff members shall not cancel, miss, terminate or shorten scheduled instruction except for good reason. Whenever a scheduled period of instruction is cancelled, the academic staff member shall:

a) inform the class at the earliest possible time;

b) inform the administrative head of his/her academic unit; and,

c) where possible, ensure that appropriate substitution or make-up instruction is provided.

9. Academic staff members who provide instruction shall comply with the schedules and formats for reporting student grades, as established by departments and the Registrar's Office. Where such grades are reviewed by departmental committees, instructors should be available for the duration of the committees' work. An instructor who learns of an error,



which if corrected would raise an assigned grade, should correct it without requiring the student affected to appeal his/her grade.

10. Academic staff members shall adhere to the relevant University, faculty/ school, and/or departmental policy regarding professor-course evaluation.

**B. Collective Responsibilities**

1. Through their faculty/school and department councils, academic staff members should review program and course descriptions periodically to ensure that the material to be presented is current and appropriate and that the calendar information is clear and accurate.

2. The following material must be kept on file in faculty/school or departmental general offices and made available to students:

- a) University, faculty/school or departmental regulations regarding class attendance and penalties, if any, for non-compliance;
- b) The information described in Section 4 under “Discharge of Responsibilities, A – Individual Responsibilities”, that is provided in writing to the class by the academic staff member for each course section;
- c) University, faculty/school, and/or departmental regulations and procedures, if any, regarding the evaluation of professors and courses by students;
- d) University, faculty/school, and/or departmental policy regarding student access to final examination scripts;
- e) University policy on student discipline;
- f) University, faculty/school, and departmental procedures regarding grade appeals;
- g) University policy on the responsibilities of academic staff with regard to students; and,
- h) University policy regarding sexual harassment.

3. Where necessitated by large class sizes or other circumstances, academic units shall ensure that course instructors and/or designated substitutes are available for individual consultation with students for a reasonable amount of time on a known and posted basis.

**V Cautionary Notice,**

Students are reminded that the initiation of a frivolous or vexatious complaint may result in disciplinary action being taken against them by the University.

This Policy is available online at: [umanitoba.ca/admin/governance/governing\\_documents/students/280.htm](http://umanitoba.ca/admin/governance/governing_documents/students/280.htm)

**SECTION 2: Policy on Respectful Work and Learning Environment**

**1.0 Reason for Policy,**

a) To support a climate of respect in the workplace and in the learning environment where individuals or groups of individuals are free from harassment and discrimination.

b) The issue of workplace safety and health with respect to a workplace harassment prevention policy is governed by provincial legislation and more specifically Manitoba Workplace Safety and Health Regulation 3217. This Regulation identifies certain responsibilities for employers and employees in this regard. A policy on workplace harassment is required.

**2.0 Policy Statement,**

2.1. The University of Manitoba supports equity, diversity and the dignity of all people. The University promotes equity in our learning programs and employment and in the conduct of the University’s affairs.

2.2 The University recognizes the following:

- (a) a richly diverse society in Manitoba, as well as beyond;
- (b) a duty to act in a manner consistent with existing legislation regarding human rights;
- (c) a commitment to academic freedom and freedom of thought, inquiry, and expression among its members which may result in respectful disagreements regarding beliefs or principles.

2.3 Each individual has the right to participate, learn, and work in an environment that promotes equal opportunities and prohibits discriminatory practices.

2.4 The University of Manitoba does not condone behaviour that is likely to undermine the dignity, self-esteem or productivity of any of its members and prohibits any form of discrimination or harassment whether it occurs on University property or in conjunction with University-related activities. Therefore, the University of Manitoba is committed to an inclusive and respectful work and learning environment, free from:

- (a) discrimination or harassment as prohibited in the Manitoba Human Rights Code;
- (b) sexual harassment; and
- (c) personal harassment.



2.5 These types of discrimination or harassment are defined in the Procedures document which relates to this Policy.

2.6 The University of Manitoba and all members of the University community, particularly those in leadership roles, share the responsibility of establishing and maintaining a climate of respect within this community and to address any situations in which respect is lacking.

2.7 Harassment and discrimination violate an individual's human rights and run contrary to the University's fundamental values. The University of Manitoba will act promptly and efficiently to deal with these behaviours. It will endeavour to ensure that individuals who believe that they have been subjected to harassment or discrimination are able to express concerns and register complaints without fear of retaliation or reprisal. The University will exercise care to protect and respect the rights of both the complainant and the respondent.

2.8 The University of Manitoba will establish mechanisms to give effect to this Policy including:

(a) the appointment of an equity services advisor whose duties shall include the investigation of informal complaints and the provision of advice and assistance to staff members, students and administrative officers in connection with concerns and complaints;

(b) the appointment of one or more investigation officer(s) whose duties shall include the investigation of formal complaints and the provision of advice and assistance to staff members, students and administrative officers in connection with concerns and complaints;

(c) training for staff related to harassment and discrimination;

(d) the University of Manitoba will establish and implement educational programs designed to enhance awareness of the Respectful Work and Learning Environment Policy and procedures relating to it.

2.9 Each year a report will be prepared by Equity Services and made available to the University community concerning the number, type and disposition of cases and on educational and other activities related to the Policy.

2.10 While the University of Manitoba supports the informal resolution of problems associated with such behaviour, it considers harassment and discrimination in all its forms to be serious offences. Normally the President shall delegate authority to the Vice-President (Administration) to take disciplinary action, where appropriate, against individuals who have violated this Policy.

2.11 Discipline may range from a reprimand to dismissal or expulsion. Where Collective Agreement provisions require that the President obtain the approval of the Board of Governors for a suspension or dismissal, the finding of the

Vice-President (Administration) shall be referred to the President in the form of a recommendation for action.

2.12 The Workplace Safety and Health Regulation 3217 requires that every harassment prevention policy contain the following statements:

(a) every employee is entitled to work free of harassment;

(b) the employer must ensure, so far as it is reasonably practicable, that no worker is subject to harassment in the workplace;

(c) the employer will take corrective action respecting any person under the employer's direction who subjects a worker to harassment;

(d) the employer will not disclose the name of the complainant or an alleged harasser or the circumstances related to the complainant to any person except where disclosure is:

i) necessary to investigate the complaint or take corrective action with respect to the complaint; or

ii) required by law;

(e) a worker has the right to file a complaint with the Manitoba Human Rights Commission;

(f) the employer's harassment prevention policy is not intended to discourage or prevent the complainant from exercising any other legal rights pursuant to any other law.

2.13 Workplace Safety and Health Regulation 3217 defines "harassment" as "any objectionable conduct, comment or display by a person that

(a) is directed at a worker in a workplace;

(b) is made on the basis of race, creed, religion, colour, sex, sexual orientation, gender-determined characteristics, political belief, political association or political activity, marital status, family status, source of income, disability, physical size or weight, age, nationality, ancestry or place of origin, and

(c) creates a risk to the health of the worker.

2.3 This Policy supersedes:

(a) all previous Board/Senate Policies and resolutions on the subject matter herein;

(b) all previous Administrative Policies and directives on the subject matter contained herein;



(c) Respectful Work and Learning Environment Policy (June 22, 2004)

This Policy is available online at:  
[umanitoba.ca/admin/governance/governing\\_documents/community/230.htm](http://umanitoba.ca/admin/governance/governing_documents/community/230.htm)

### SECTION 3: Accessibility Policy for Students with Disabilities

#### Reason for Policy,

1.1 The University of Manitoba strives to ensure an accessible learning and working environment and is thereby committed to providing reasonable accommodation of the needs of persons with documented disabilities.

1.2 The purpose of this policy is to support an accessible learning environment where students with disabilities, who are admitted to the University of Manitoba, can gain access to all programs for which they are academically qualified.

#### 2.0 Policy Statement

##### 2.1 General

The University shall endeavour to foster, create, and maintain an accessible campus and provide other supports and services to students with disabilities.

2.1.1 The University of Manitoba will use reasonable efforts to ensure that students with disabilities are considered for admission to programs for which they are academically qualified; and have full and safe access to the educational process and learning environment (including but not limited to classes, laboratories, and workshops), the University campus, and University facilities and services.

2.1.2 The University will use reasonable efforts to offer reasonable accommodations in the delivery of academic programs and services to students with disabilities.

2.2 The Disability Services (DS) office is the centralized service for the University of Manitoba community. DS provides a focus for activity and expertise regarding disability-related accommodations within the University, and for liaison with outside organizations regarding accessibility issues, and programs and services for students with disabilities at the University of Manitoba. In providing accommodations, the DS office will:

2.2.1 request and evaluate appropriate medical documentation from students requesting assistance from DS and assign appropriate services to meet the needs of each student by adapting services, courses, and programs as feasible;

2.2.2 ensure that the University's criteria for academic excellence will not be compromised; and

2.2.3 inform the University community about the services available to students with disabilities through the DS office, and seek to ensure that such services are delivered in ways that promote equity, recognizing that performance is not inferior merely because it is different.

2.3 The University is responsible for maintaining the confidentiality of disability related information under The Freedom of Information and Protection of Privacy Act (Manitoba) and The Personal Health Information Act (Manitoba), including limiting the distribution of that information to only those parties that require the information to determine appropriate accommodation.

2.4 The University expects that student, instructors and support staff will share the responsibility for the delivery of reasonable accommodation.

2.5 The University will foster a supportive University community by working to inform and educate community members about issues related to disabilities.

2.6 Students requesting accommodations are responsible to initiate contact with the DS office and make the nature of their disability and/or their needs known in a timely fashion. Where possible, students are requested to declare their needs to DS staff before or at the time they register for, or are admitted into, a program.

This Policy is available online at:  
[umanitoba.ca/admin/governance/governing\\_documents/students/281.htm](http://umanitoba.ca/admin/governance/governing_documents/students/281.htm).

### SECTION 4: Disclosure and Security of Student Academic Records

Disclosure and Security of Student Academic Records, The University and its constituent units have a clear obligation to the student and to society concerning the disclosure and security of information about a student's academic record. All student records will be handled in accordance with *The Freedom of Information and Protection of Privacy Act (Manitoba) (FIPPA)* and the *Personal Health Information Act (Manitoba) (PHIA)* as appropriate. Students who have questions on this matter should contact the Registrar's Office or the FIPPA Office.

### SECTION 5: Language Usage Guidelines

#### Introduction,

The University of Manitoba, as an institution of higher learning, has a commitment to high standards in all communications, both written and oral as well as a prominent role in promoting desirable social change. As an employer, it is especially sensitive to the fair treatment of individuals and groups. The University of Manitoba therefore follows guidelines which are designed to avoid communicating in a manner that reinforces questionable attitudes and assumptions about people and sex roles. Often



the problem is one of word choices which may be interpreted as biased, discriminatory, or demeaning, even though they were not intended to be. These guidelines will assist administrators in choosing words which are accurate, clear, and free from bias.

### Guidelines

Sexism in communications may be divided into two conceptually different categories:

1. Problems of designation, and
2. Problems of evaluation.

#### I. Problems of Designation,

In the case of sexism, long-established cultural practice can exert a powerful, insidious influence over even the most conscientious person. Nouns, pronouns, and adjectives that designate persons can be chosen to eliminate, or at least to minimize, the possibility of ambiguity in sex identity or sex role. In the following examples, problems of designation are divided into two sub-categories: ambiguity of referent, where it is unclear whether the communicator means one or both sexes, and stereotyping, where the communication conveys unsupported or biased connotations about sex roles and identity.

#### Problems of Evaluation

By definition, communications should be free of implied or irrelevant evaluation of the sexes.

Difficulties may derive from the habitual use of clichés or familiar expressions such as “man and wife.” The use of “man and wife” together implies differences in the freedom and activities of each. “Husband and wife” are parallel, “man and wife” are not. In the examples that follow, problems of evaluation, like problems of designation, are divided into ambiguity of referent and stereotyping.

#### Problems of Designation

##### Ambiguity of Referent:

The **student** is usually the best judge of the value of his counselling.

Choices might include deleting the referent “his,” changing to a plural subject (Students are...value of the counselling service **they** receive), or rephrase (The best judge of the value of counselling is usually the student).

**Man** or **mankind** (people, human beings, etc.) the average **man** (average person, people in general), **manpower** (workforce, personnel, human resources).

#### Stereotyping:

Research scientists often neglect their **wives** and **children**.

- a) Acknowledge that women as well as men are research scientists (Research scientists often...neglect their **families**).
- b) Mothering (noun substitute - parenting, nurturing).
- c) **Woman** doctor, **male** nurse, **lady** lawyer. (delete sex description unless necessary to the discussion, then use **female** doctor, **female** lawyer).

#### II. Problems of Evaluation,

##### A. Ambiguity of Referent:

1. The authors acknowledge the assistance of **Mrs. John Smith**. (-Use given names in acknowledgements, e.g., Ms., Miss or Mrs. Jane Smith).

##### B. Stereotyping

1. men and **girls**. (Use parallel terms - men and women, girls and boys, unless specifically wishing to denote adult and child relationship).
2. **woman** driver. (Specify only if necessary and then use female driver).
3. Staff members and their **wives**. (Staff members and their **spouses/friends/guests**).
4. The **girls** in the office. (noun substituted - secretaries, staff, office assistants).

NOTE: A more detailed list of examples of the sexist use of language can be obtained by contacting the Office of the President.

This Policy is available online at:

[umanitoba.ca/admin/governance/governing\\_documents/staff/312.htm](http://umanitoba.ca/admin/governance/governing_documents/staff/312.htm)

### **SECTION 6: Conflict of Interest Between Evaluators and Students due to Close Personal Relationships**

#### 1.0 Reason for Policy,

The purpose of this policy is to ensure that the relationship between an evaluator and the person being evaluated is and is seen to be impartial.

#### 2.0 Policy Statement,

##### 2.1 Definitions



2.1.1 An evaluator includes any person who participates, whether at first instance or on appeal, in the process of admitting or selecting a student to a course or program, determination of a student's progress or academic standing, or the receipt by a student of a prize, award or university financial support.

2.1.2 A conflict of interest means a close personal relationship between an evaluator and a student or applicant, or between evaluators, that gives rise to a reasonable apprehension of bias and, in any event, such relationships shall include that of:

- a) parent/child;
- b) spouses;
- c) grandparent/grandchild;
- d) siblings;
- e) in- laws; or
- f) persons living in the same dwelling unit.

## 2.2 Procedures

2.2.1 Responsibility for avoiding the conflict of interest rests with the evaluator. In cases of uncertainty, the evaluator shall and the student may refer the matter for determination to the department head (or dean/director, as appropriate). The decision of the department head is subject to review by the dean/director of the academic unit.

2.2.2 Where there is a conflict of interest, the evaluator shall immediately withdraw from participation and shall inform the student concerned and the head or dean/director, as appropriate.

a) Where alternative sections or electives exist, the alternative must be taken, unless the dean/director concerned determines that this will create an undue hardship for the student.

b) Where the dean/director has exercised discretion under 2.2.2(a) or where no alternatives exist to compulsory courses, the dean/director shall ensure fair evaluation by having another suitably qualified evaluator review the submitted material or hear the oral presentations. Where practicable, the evaluator shall not participate in setting the examination or other evaluation method.

2.2.3 Where the dean or director has a conflict of interest, the president shall name a replacement to act in the matter.

2.2.4 In the case of failure to observe these regulations, staff members will be subject to the discipline procedures

provided by the appropriate collective agreement or personnel policy of the University.

This Policy is available online at:

[umanitoba.ca/admin/governance/governing\\_documents/students/277.htm](http://umanitoba.ca/admin/governance/governing_documents/students/277.htm).

## SECTION 7: Other Policies of Interest to Students

### Campus Alcohol Policy, 1.0 Reason for Policy

This policy is a general statement and guideline, setting out the University's requirement for strict compliance with the Liquor Control Act (Manitoba), as well as any rules and regulations, and any successor or replacement rules and regulations, at all events and facilities at which alcohol is available. This policy is further to the Liquor Control Act (Manitoba), as well as any rules and regulations and directives pursuant to the Act (The "MLCC rules and regulations").

### 2.0 Policy Statement

2.1 Alcohol abuse is a serious health problem and can lead to conduct that may endanger the safety of individuals and result in damage to property both on and off the University of Manitoba Fort Garry and Bannatyne Campuses (the "Campuses"). This in turn may result in legal claims involving the University and others. The purpose of this policy is to explicitly establish the general means by which alcohol abuse on the Campuses can be reduced, and to the extent possible, eliminated.

### 2.2 The University shall meet the policy's objective by:

2.2.1 Offering an alcohol education and awareness program within the scope of programs offered by or through Student Affairs;

2.2.2 Maintaining University guidelines with respect to the serving and consumption of alcohol on the Campuses;

2.2.3 Requiring that events and facilities at which alcohol is served on the Campuses (the "events and facilities") be managed effectively, and in accordance with the University's policy and procedures and Manitoba Liquor Control Commission rules and regulations; and this policy applies broadly, and covers all events and facilities on the Campuses.

This policy is available online at:

[http://www.umanitoba.ca/admin/governance/governing\\_documents/community/253.html](http://www.umanitoba.ca/admin/governance/governing_documents/community/253.html)

Parking Regulations,



All members of the University community and persons attending on property, owned and occupied or under the charge or control of the University, including roadways (the "University property") are required to familiarize themselves and comply with the Regulations.

The Regulations are in addition to any by-laws of the City of Winnipeg and any legislation and regulations of the Province of Manitoba regulating the operation or use of motor vehicles or regulating the crossing of or walking upon roadways by pedestrians.

A complete copy of the University Parking Regulations is available online at:  
[umanitoba.ca/admin/governance/governing\\_documents/%20community/255.htm](http://umanitoba.ca/admin/governance/governing_documents/%20community/255.htm)

### SECTION 8: Student Discipline Bylaw

Students are expected to conduct themselves responsibly with due regard for the rights of others and to maintain a high level of personal and academic integrity. Students who transgress these standards, whether expressed in policy or implied in generally accepted codes of conduct, can expect disciplinary action. Penalties arising from disciplinary actions may include fines, withholding of student privileges, suspension or expulsion from programs, or some other action specific to the situation. Penalties may also affect student eligibility to continue in their programs or to graduate.

The following are some of the policies and regulations relating to student discipline and behaviour.

#### Student Discipline Bylaw, 1.0 Reason for Bylaw

The Student Discipline Bylaw and related Procedures provide guidance to those individuals charged with administering disciplinary action ("Disciplinary Authority") while, at the same time, outlining the prohibited conduct and the right of appeal.

#### 2.0 Rule/Principle

2.1 As members of the University Community, students have an obligation to act with academic integrity and in a fair and reasonable manner towards their peers, faculty, staff, administration and the physical property of the University. Academic integrity and personal conduct, both on-campus and off-campus in university-sanctioned activities, are critical elements in achieving these obligations.

2.2 Students will be subject to disciplinary action under this bylaw, for the following matters regardless of whether such behaviour is covered by other University governing documents; (bylaws, policies, procedures and regulations).

2.2.1 Academic dishonesty including, but not limited to:

- (a) academic/scientific fraud;
- (b) cheating on exams or tests;
- (c) contravention of academic regulations;
- (d) re-submitting own previous course work as new work;
- (e) examination personation;
- (f) inappropriate collaboration; and
- (g) plagiarism (i.e., passing off the thoughts, writings and work of another person as one's own).

2.2.2 Inappropriate behaviour including, but not limited to:

- (a) abuse of computer privileges;
- (b) alcohol and substance abuse;
- (c) breach of residence hall regulations;
- (d) disorderly, violent or threatening behaviour;
- (e) false or misleading information made for any purpose including information in connection with:
  - i) application for admission;
  - ii) application for awards;
  - iii) medical certificates;
  - iv) letters of permission;
  - v) transfer of credits; and
  - vi) transcript/student records matters;
- (f) harassment and unlawful discrimination;
- (g) indecent exposure;
- (h) theft;
- (i) unprofessional conduct; and
- (j) vandalism.

2.3 The specific jurisdiction for each of the Disciplinary Authorities is set out in "Table 1: Jurisdiction of Disciplinary Authorities" ("Table 1"). For the purposes of this document



and the related Procedures document, references to Faculty/School will include University 1 and Dean/Director will include the Director of University 1.

2.4 The specific disciplinary actions available for each Disciplinary Authority are set out in "Table 2: Disciplinary Actions Available to Disciplinary Authorities" ("Table 2").

2.5 Disciplinary Authorities having the closest connection with the particular alleged disciplinary matter are encouraged whenever possible and appropriate to resolve student disciplinary matters informally in the first instance.

2.6 Students who make complaints or appeals which are found by the Disciplinary Authority to be frivolous or made for an improper purpose, may be subject to disciplinary action.

2.7 If the disciplinary matter relates to a criminal offence, the Disciplinary Authority shall provide relevant information to Campus Security Services for potential follow-up by the appropriate policing authority.

2.8 Students have a right to appeal disciplinary actions made by a Disciplinary Authority excluding the decisions of the University Discipline Committee ("UDC") which are final decisions.

2.9 Students are advised that the Disciplinary Authority to whom an appeal has been made may impose a more severe disciplinary action than previously recommended by a lower disciplinary body should the hearing panel, after reviewing the disciplinary evidence presented by all parties, consider the original disciplinary action insufficient.

2.10 Student are afforded the right to representation when dealing with disciplinary matters in the first instance and with respect to appeals; and both are subject to the limitations set out in the related Procedures.

2.11 No disciplinary action shall be implemented until the time for appeal has elapsed or until the Student has waived in writing the right to appeal, whichever occurs first. The only exceptions to this rule shall be:

(a) where the disciplinary action would be entered on the academic records of the Student, the Registrar shall be notified by the Disciplinary Authority implementing such disciplinary action, and shall not issue any academic transcripts until the appeal has been disposed of;

(b) where the disciplinary action relating to academic dishonesty or academic fraud may result in a change to the Student's transcript, the Registrar shall be notified by the Disciplinary Authority implementing such disciplinary action, and shall not issue any transcripts until the appeal has been disposed of:

(c) where changes in the Student's courses and/or program are directly related to the matter under disciplinary consideration, such changes shall not be permitted; and

(d) where the disciplinary action if not implemented, the safety of members of the University Community would be compromised.

Students may request information from their faculty or school offices, the Office of Student Advocacy, or the Office of the University Secretary.

The bylaw is available online at:

[umanitoba.ca/admin/governance/governing\\_documents/students/868.html](http://umanitoba.ca/admin/governance/governing_documents/students/868.html)

## **SECTION 9: Inappropriate and Disruptive Student Behaviour**

### **1.0 Reason for Policy**

In the event of a student or students exhibiting inappropriate or disruptive behaviour, the following policy can be implemented.

### **2.0 Policy Statement**

#### **2.1 General**

Although this policy is directed to dealing with students who exhibit inappropriate or disruptive behaviour, there are some general statements which should be made:

2.1.1 The vast majority of students will complete their academic life at the University acting appropriately and without causing disruptions to their fellow students or to the University. This policy is not directed towards individual students who have a mental illness, provided their behaviour is neither inappropriate nor disruptive.

A staff member may notice that an individual student is exhibiting debilitating stress, even though he/she is not acting disruptively. In that case, the observation should be addressed with the student and, if appropriate, the student should be referred for voluntary counselling.

2.1.2 "In appropriate or disruptive behaviour is behaviour which persistently interferes with the academic or administrative activities of the University (and/or) which inhibits the ability of other students to learn and of instructors to teach." – Amanda, G. "Dealing with the Disruptive College Student: Some Theoretical and Practical Consideration", *College Health*, April 1986.

Such behaviours would include but would not be limited to the following:



- a) threats to the physical safety of the individuals or others;
- b) verbal threats to or abuse of students or University personnel;
- c) recurring and wilful damage of University property;
- d) inappropriate or disruptive behaviour as a result of misuse of drugs or alcohol on University property; and
- e) actions which habitually interfere with the learning environment or requires the inordinate time and attention of faculty and staff.

2.1.3 Where the individual students act inappropriately or disruptively:

a) The majority of such students will accept personal responsibility for their inappropriate or disruptive behaviour, and will accept appropriate referral for voluntary counselling. For the most part, staff members need only use the "Normal Procedure for Dealing with Inappropriate or Disruptive Behaviour" set out below.

b) Information and input received from professionals in the mental health field and professional practitioners at the University would suggest that the numbers of such students who do not accept personal responsibility or appropriate voluntary counselling are small. Where a student to whom this policy should apply identified by a staff member, he/she will use part 2 of the "Normal Procedure"; and if appropriate in more extreme cases involving physical or mental harm, he/she should use the "Procedure for More Extreme Behaviour".

c) Where an officer(s) of the University believes that a student is inappropriately involving more than one of the various service and administration offices of the University, he/she shall request the Vice-Provost (Student Affairs) to initiate a staff conference to facilitate communication and problem resolution.

d) Information regarding an acute problem of inappropriate or disruptive behaviour which is disclosed during the student application process, should be referred to the Director of Admissions or the Dean of Graduate Studies as appropriate. If the information is of serious concern to the respective Director of Admissions or the Dean of Graduate Studies, he/she may seek the advice of the University Legal Counsel and may initiate a student conference.

## 2.2. Normal Procedure for Dealing with Inappropriate Behaviour

When a student acts inappropriately or disruptively, staff members should, where appropriate:

2.2.1 Make timely voluntary counselling referrals through existing support services at the University. Such services include:

Counselling Service

Psychological Service Centre,

University Health Services

Faculty (of Medicine) Counselling Services.

2.2.2 Use the existing Student Discipline Bylaw and other policies, rules and regulations where additional action is necessary to deal with inappropriate or disruptive behaviour or students.

## 2.3 Procedure for More Extreme Behaviour

2.3.1 If a staff member is of the opinion that a student is exhibiting a behaviour of a nature of quality that likely will result in:

a) Serious harm to student,

b) Serious harm to another person, or

c) Substantial deterioration of the student's health;

The staff member shall, in addition to using the "Normal Procedure", immediately refer the matter to his/her respective Dean, Director, or Administrative Unit Head.

2.3.2 If the respective Dean, Director, or Administrative Unit Head is of the same opinion, he/she shall:

a) Advise the student to seek professional help; and

b) Contact the Director of University Health Services if the student refuses to voluntarily seek professional help. The Director of University Health Services or designate shall follow mental health legislation and regulations when determining whether or not involuntary psychiatric assessment is advisable.

c) In addition to the foregoing procedure, the Campus Police should be contacted immediately if it is deemed necessary for the protection of the student, other persons, or property. It should also be noted that, subject to the Student Discipline Bylaw, the President may at any time make an order restricting or prohibiting access by a student to any University property.

This policy is available online at:

[umanitoba.ca/admin/governance/governing\\_documents/students/279.html](http://umanitoba.ca/admin/governance/governing_documents/students/279.html)



## **SECTION 10: Violent and Threatening Behaviour**

### **1.0 Reason for Policy**

The purpose of this Policy is to state clearly the University's refusal to tolerate violence in the workplace and on the University campus and to describe possible consequences of such action. It is believed that the Policy and the supporting Procedures represent a significant move towards the prevention of violence, as well as the management of a violent episode.

The issue of safety and health in the workplace with respect to violence is governed by provincial legislation and more specifically The Workplace Safety and Health Act (Manitoba) – Regulation 3217/2006 (the Regulation). The Regulation identifies certain responsibilities for employers and employees in this regard. A policy on violence in the workplace is required.

### **2.0 Policy Statement**

The University of Manitoba is committed to creating and maintaining a safe, positive and productive learning and working environment. Therefore, the University will not tolerate violent or threatening behaviour. Individuals who are found to have engaged in activities prohibited under this Policy will be subject to disciplinary action which may result in termination of employment, expulsion from educational programs, a ban from university property, and any other remedies the University may be entitled to at law or otherwise.

### **2.1 Definitions and Interpretations**

(a) Intimidation is defined as conduct or harassment that disrupts the work or learning environment and/or results in a reasonable fear for personal safety;

(b) External Parties includes contractors providing services to the University, visitors to the University or other external organizations operating within the University community;

(c) Student is defined as any person registered as a student with the University of Manitoba;

(d) Threats include verbal and/or physical actions that create fear or apprehension of bodily harm;

(e) Violence is defined as the attempted or actual exercise of physical force against a person and any threatening statement or behaviour that gives a person reasonable cause to believe that physical force will be used against the person;

(f) Violent or Threatening Behaviour is behaviour that includes a combination of, or all of, the behaviour defined above as "Intimidation, Threats and Violence".

(g) Worker(s) includes:

i) any person who is employed by the University, to perform a service whether for gain or reward, or hope of gain or reward or not;

ii) any person who works or performs services in a Workplace which is owned or operated by the University;

iii) any person undergoing training or serving an apprenticeship at the University; and

iv) any individual described in the Procedure entitled "Employee Organizations and Employment Groups".

(h) Workplace means any building, site, workshop, structure, mobile vehicle, or any other premises or location whether indoors or outdoors in which one or more Worker(s) or self employed persons are engaged in work or have worked for the University;

(i) Any references to legislation, committees or units within the University in this Policy shall be deemed to include successor or substitute legislation, committees or units, in their place thereof.

### **2.2 The following statements must be included in this Policy as a requirement of Regulation 3217. The University, as an employer,**

(a) must ensure, so far as it is practicable, that no worker is subjected to violence in the Workplace;

(b) will take corrective action respecting any person under the employer's direction who subjects a Worker to Violence;

(c) will not disclose the name of a complainant to any person except where disclosure is

i) necessary in order to investigate the complaint;

ii) required in order to take corrective action in response to the complaint, or

iii) required by law.

(d) By approving this Policy, does not intend to discourage or prevent the complainant from exercising any other legal rights pursuant to any other law.

This policy is available online at:  
[umanitoba.ca/admin/governance/governing\\_documents/community/669.html](http://umanitoba.ca/admin/governance/governing_documents/community/669.html)



## **SECTION 11: Hold Status**

Students will be placed on “Hold Status” if they incur any type of outstanding obligation (either financial or otherwise) to the university or its associated faculties, schools, colleges or administrative units.

Some typical reasons for holds are:

- Outstanding fees or other unpaid university fees
- Outstanding library books and/or fines
- Parking fines
- Outstanding transcripts or documents required from other institutions
- Students records pending disciplinary action.

No administrative or academic services will be provided to students on Hold Status until the specific obligations have been met.

Students who have not cleared their Hold Status from previous registrations will not be permitted to register again until the hold has been cleared or permission to register has been obtained from the Office of the Vice-President (Administration).



## General Academic Regulations

### SECTION 1: Introduction

This chapter contains the regulations and requirements that apply to all students, regardless of faculty or school.

Each faculty and school has its own supplementary regulations and requirements. These are published in the faculty or school chapters of this *Calendar*. Some faculties and schools also have additional regulations and requirements governing their programs; these are available from the faculty or school.

It is the responsibility of each student to be familiar with the academic regulations and requirements of the University of Manitoba in general and of the specific academic regulations and requirements of their faculty or school of registration. Accordingly, students are asked to seek the advice of advisors in faculty and school general offices whenever there is any question concerning how specific regulations apply to their situations.

### SECTION 2: Residence and Written English and Mathematics Requirements

**2.1 Residence Requirements For Graduation,**  
 Each faculty and school recommends to the Senate the number of credit hours each student must complete in order to graduate from its programs. Senate also requires each student to complete a minimum number of credit hours at the University of Manitoba -- this is called the "residence requirement."

Unless otherwise stated in faculty and school chapters, the minimum residence requirement of the University of Manitoba is the work normally associated with one year in the case of programs of three years' duration, and two years for programs of four years' duration. Some faculties and schools may have additional residence requirements specified in their program regulations. However, in all cases, the residence requirement is assessed following an appraisal of the educational record of the student applying to transfer credits from another institution or applying to earn

credits elsewhere on a letter of permission. The residence requirement is not reduced for students whose "challenge for credit" results in a passing grade.

### 2.2 University English and Mathematics Requirements for Undergraduate Students,

All students are required to complete, within the first 60 credit hours of their programs, a minimum of one three credit hour course with significant content in written English, and a minimum of one three credit hour course with significant content in mathematics.

Some degree programs have designated specific written English and mathematics courses to fulfil this requirement.

Some degree programs require that the written English and/or mathematics requirements be completed prior to admission.

See the program descriptions in the faculty and school chapters of this *Calendar* for details.

Exemptions to the Written English and Mathematics Requirement:

- All students with completed baccalaureate degrees and who transfer into any program to which these requirements apply.
- Registered Nurses entering the Bachelor of Nursing Program for Registered Nurses.
- Students admitted before the 1997-98 Regular Session.
- Written English exemption only: Students transferring from Université de Saint-Boniface who have completed a written French requirement (at the university) before transferring to the University of Manitoba will be deemed to have met the written English requirement.

### 2.3 Approved English and Mathematics Courses,

A complete list of all courses which satisfy the university written English and mathematics requirement is provided below. (On the web, students may search Course Attributes for courses that satisfy the written English and Mathematics requirements).

Written English Courses	
AGRI 2030	Technical Communications (3)
ANTH 1520	Critical Cultural Anthropology (3)
ANTH 2020	Relatedness in a Globalizing World (3)
ANTH 2230	Anthropology of Travel and Tourism (3)
ARTS 1110	Introduction to University (3)
ASIA 1420	Asian Civilization to 1500 (3)
ASIA 1430	Asian Civilization from 1500 (3)
CDN 1130	Introduction to Canadian Studies (6)
CATH 1190	Introduction to Catholic Studies (3)
CATH 2010	Literature and Catholic Culture 1 (3)
CATH 2020	Literature and Catholic Culture 2 (3)
ECON 2270	European Economic History (6)



ECON 2580	Economics of the European Union (3)
ENGL 0930	English Composition (3)
ENGL 0940	Writing about Literature (3)
ENGL 1XXX	All English courses at the 1000 level
ENGL 2XXX	All English courses at the 2000 level
ENGL 3XXX	All English courses at the 3000 level
ENGL 4XXX	All English courses at the 4000 level
FORS 2000	Introductory Forensic Science
GEOG 2900	Geography of Canadian Prairie Landscapes (3)
GEOG 3480	Canadian Problems (A) (3)
GEOG 3580	Landforms (6)
GEOG 3900	Geography of Manitoba (3)
GEOL 1410	Natural Disasters and Global Change (3)
GEOL 3130	Communication Methods in the Geological Sciences (3)
MGMT 1010	Business and Society (3)
MGMT 2010	Business Communications
GPE 2700	Perspectives on Global Political Economy (3)
GRMN 1300	Masterpieces of German Literature in English Translation (3)
GRMN 1310	Love in German Culture in English Translation (3)
GRMN 2120	Introduction to German Culture 1 (3)
GRMN 2130	Introduction to German Culture 2 (3)
HIST 1XXX	All History courses at 1000 level
HIST 2XXX	All History courses at 2000 level
HMEC 2030	Human Ecology: Perspectives and Communication (3)
HYGN 1340	Communication (2) and
HYGN 1350	Community Health (4) and
HYGN 1240	Pre-clinical and Clinical Dental Hygiene (9)
LABR 1260	Working for a Living (3)
LABR 2300	Workers, Employers, and the State (3)
LABR 4510	Labour Studies Field Placement Seminar (3)
LAW 1470	Legal Methods (5)
LAW 2570	Introduction to Advocacy (4)
LING 2740	Introduction to Interpretation Theory (3)
NATV 1200	The Native Peoples of Canada (6)
NATV 1220	The Native Peoples of Canada, Part 1 (3)
NATV 1240	The Native Peoples of Canada, Part 2 (3)
NATV 2020	The Métis of Canada (3)
PHIL 2610	The History and Philosophy of Science (6)
PHIL 2790	Moral Philosophy (6)
PHIL 3220	Feminist Philosophy (3)
POL 1900	Love, Heros and Patriotism in Contemporary Poland (3)
POL 2600	Polish Culture until 1918 (3)
POL 2610	Polish Culture 1918 to the present (3)
POLS 1500	Introduction to Politics (6)
POLS 2000	Introduction to Comparative Politics (6)
POLS 2040	Introduction to International Relations (6)
POLS 2070	Introduction to Canadian Government (6)
POLS 2510	Great Political Thinkers (6)
PSYC 2500	Elements of Ethology (3)
REHB 1520	Principles of Occupational Therapy (4)
RLGN 1320	Introduction to World Religions (6)
RLGN 1420	Ethics in World Religions (3)
RLGN 1424	Introduction to Judaism (3)
RLGN 1440	Evil in World Religions (3)
RLGN 2036	Introduction to Christianity (3)
RLGN 2140	Religion and Sexuality (3)
RLGN 2160	Introduction to Hebrew Scriptures (3)
RLGN 2170	Introduction to the New Testament (3)
RLGN 2590	Religion and Social Issues (3)
RLGN 2760	Rabbinic Judaism (3)
RLGN 2770	Contemporary Judaism (3)



RLGN 3280	Hasidism (3)
RUSN 1400	Masterpieces of Russian Literature in English Translation (3)
RUSN 2280	Russian Culture 1 (3)
RUSN 2290	Russian Culture 2 (3)
RUSN 2310	Exploring Russia Through Film (3)
RUSN 2410	Russian Literature after Stalin (3)
RUSN 2740	Literature and Revolution (3)
RUSN 3770	Tolstoy (3)
RUSN 3980	Women and Russian Literature (3)
SOC 3350	Feminism and Sociological Theory (3)
UKRN 2200	Ukrainian Myths, Rites and Rituals (3)
UKRN 2410	Ukrainian Canadian Cultural Experience (3)
UKRN 2590	Ukrainian Literature and Film (3)
UKRN 2770	Ukrainian Culture 1 (3)
UKRN 2780	Ukrainian Culture 2 (3)
UKRN 2820	Holodomor and Holocaust in Ukrainian Literature and Culture (3)
UKRN 3970	Women and Ukrainian Literature (3)
WOMN 1500	Introduction to Women's and Gender Studies in the Humanities (3)
WOMN 1600	Introduction to Women's and Gender Studies in the Social Sciences (3)
WOMN 2560	Women, Science and Technology (3)

**Mathematics Courses**

FA 1020	Math in Art (3)
GEOG 3810	Quantitative Research Methods in Geography (3)
MATH 1XXX	All Mathematics courses at the 1000 level
MATH 2XXX	All Mathematics courses at the 2000 level
MATH 3XXX	All Mathematics courses at the 3000 level
MATH 4XXX	All Mathematics courses at the 4000 level
MUSC 3230	Acoustics of Music (3)
PHYS 1020	General Physics 1 (3)
PHYS 1030	General Physics 2 (3)
PSYC 2260	Introduction to Research Methods (3)
REHB 2460	Statistics (3)
SOC 2290	Introduction to Research Methods (6)
STAT 1XXX	All Statistics courses at the 1000 level
STAT 2XXX	All Statistics courses at the 2000 level
STAT 3XXX	All Statistics courses at the 3000 level
STAT 4XXX	All Statistics courses at the 4000 level

**Prerequisite:** If a course is prerequisite for a second course, the prerequisite must be met in order to begin the second course. To determine whether or not a course has a prerequisite, see the course descriptions in the chapter of the faculty or school offering the course. Normally, a minimum grade of "C" is required in all courses listed as prerequisites, except as otherwise noted in the course descriptions.

**SECTION 3: Course Identification**

**3.1 Credit Hours (Cr.Hrs.),**

Each faculty and school develops courses for its degree credit programs, subject to Senate approval, and assigns a credit hour value to each course.

The credit hours for a course are expressed as a number associated with the course which indicates its relative weight. There is a correlation between class hours and credit hours (i.e., 6 credit hours = 3 hours a week, two terms; and 3 credit hours = 3 hours a week, one term).

For the purposes of registration, courses taught over two terms have been divided into two parts. Students registering for term spanning courses will receive one grade for the course and only when the second part is completed.

For some courses, the prerequisite may be completed before registering for the second course or may be taken concurrently with the second course. To determine if a course may be taken concurrently, see the course descriptions in the chapter of the faculty or school offering the course.

**Corequisite:** If a first course is a corequisite for a second course, the first course **must** be completed in the same term as the second course. To determine if a course has a corequisite, see the course descriptions in the chapter of the faculty or school offering the course.

**3.2 Prerequisite and Corequisite Courses,**



Where the sequence in which courses are taken is important, one course is stipulated as being prerequisite to another (e.g., Mathematics 1 may be prerequisite to Mathematics 2). Unless otherwise specified in the course description and/or in the regulations of any faculty or school, the prerequisite requirement is met if at least a passing grade (D) is earned in the course. If the course is failed, permission *may* be granted to repeat it concurrently with the course for which it is prerequisite. Some prerequisite courses may be taken concurrently. Check the course description for specific information.

Where a course is specified as a corequisite course, it must be taken at the same time as (or prior) to the course requiring it as a corequisite.

### 3.3 Course Numbers, First Two to Four Characters

The two, three or four characters in every course number are a shortened version of the subject of the course.

#### Last Four Digits

At the University of Manitoba the last four digits of the course number reflect the level of contact with the subject.

#### For example:

ECON 1200 Principles of Economics Cr.Hrs. 6

ECON is the code for Economics.

1200 indicates that it is an introductory or entry level course.

If the course requires a laboratory, this will be shown following the credit hours immediately following the title.

#### For example:

BIOL 3242 Biodiversity: Vascular Flora of Manitoba Cr.Hrs. 3  
(Lab Required)

The 2000, 3000, 4000 course numbers indicate the second, third, and fourth levels of university contact with a subject.

Numbers in the 5000 range are normally associated with pre-Master's work or courses in the Post Baccalaureate Diploma and the Post-Graduate Medical Education programs.

Courses numbered 6000-8000 are graduate courses of the Faculty of Graduate Studies.

Course numbers in the 9000 series are used to identify courses taken at the University of Winnipeg by students in the University of Manitoba/University of Winnipeg Joint Master's Programs. The 9000 numbers do not indicate the level of the course taken (see [Graduate Calendar](#) or [University of Winnipeg Calendar](#)).

In most cases, some correlation exists between the course number and a student's year of study; that is, students in the third year of a program will generally carry course loads comprised primarily of 3000-level courses.

### 3.4 Other Course Information,

Courses with numbers that end in 0 or an even number are taught in English usually on the Fort Garry or Bannatyne campuses.

Courses with numbers that end in odd numbers are taught in French at [Universitairé de Saint-Boniface](#).

## SECTION 4: Grades and Grade Point Average Calculation

Final grades in most courses are expressed as letters, ranging from D, the lowest passing grade, to A+ the highest. Each letter grade has an assigned numerical value which is used to calculate grade point averages.

Some courses are graded on a pass/fail basis and because no numerical value is assigned to these courses, they do not affect grade point averages. Courses graded in this way are clearly identified in course descriptions and program outlines.

### 4.1 The Letter Grade System, Letter Grade                      Grade Point Value



A+	4.5
A	4.0
B+	3.5
B	3.0
C+	2.5
C	2.0
D	1.0
F	0
P	
S	

Exceptional
Excellent
Very Good
Good
Satisfactory
Adequate
Marginal
Failure
Pass
Standing

University of Manitoba and courses transferred from other institutions for courses that are acceptable for credit in the current faculty or school.

The grade of "D" is regarded as marginal in most courses by all faculties and schools. It contributes to decreasing a term, degree or cumulative Grade Point Average to less than 2.0. The course in which "D" standing is obtained need not be repeated except by probationary students in certain faculties or where a minimum grade of "C" is required in a prerequisite subject or to meet degree requirements. Courses graded "D" may be repeated for the purpose of improving a GPA. Students in doubt as to the status of their record should consult an advisor in their faculty or school.

For minimum grade levels, especially as they affect progression requirements, see the faculty or school regulations or consult an advisor.

#### 4.2 Calculation of Grade Point Average, Quality Points

The quality points for a course are the product of the credit hours for the course and the grade point obtained by the student; e.g., 3 credit hours with a grade of "B" (3.0 points) = 3 credit hours x 3.0 = 9.0 quality points.

#### Quality Point Total

The quality point total is the sum of quality points accumulated as students proceed through their program of studies.

#### Grade Point Average (GPA)

The grade point average (GPA) is the quality point total divided by the total number of credit hours.

#### Cumulative Grade Point Average

The Cumulative GPA is the quality point total divided by the total number of credit hours attempted at the University of Manitoba and courses transferred from other institutions.

#### Degree Grade Point Average

The Degree grade point average is the Quality Point total divided by the total number of credit hours attempted at the

#### Term Grade Point Average

The Term GPA is calculated on the basis of all final grades received in the term (eg. Fall, Winter, or Summer terms).

#### Repeated Courses

When a course has been repeated, the last grade achieved is that which will be used in the calculation of the GPA. (Students are normally permitted to repeat the same or equivalent course once). Admissions criteria and eligibility rules may vary by faculty with respect to inclusion and calculation of grades for repeated courses.

**NOTE:** Information on credit hours, courses, prerequisites and corequisites, is found in Appendix B of this chapter, entitled Course Identification.

#### 4.3 Academic Honours,

Students qualify for the Dean's Honour List when they achieve qualifying grade point averages as specified in the faculty and school chapters of this *Calendar* or in program regulations.

In addition, outstanding academic achievement will qualify students for other honours and awards. These include the University Gold Medal which is awarded at graduation in each faculty or school to the student with the most outstanding academic record; program medals which are awarded by faculties and schools to the best student graduating from a specific program; graduation "with distinction," which is recorded on the transcripts of all students who attain a qualifying grade point average; and other medals and prizes that are specific to programs or disciplines.

### SECTION 5: Academic Evaluation

#### 5.1 Methods of Evaluation,

Within the first week of lectures, instructors must inform the class of the method of evaluation to be used in each course. See the Responsibilities of Academic Staff to Students Policy, in the chapter University Policies. In departments where a course is offered in more than one section, the department offering the course endeavours to provide



instruction so that all sections cover similar topics and that all students achieve a similar level of competency in the topic. However, there will be differences in evaluation as well as in teaching style, readings and assignments from one section to another. Students may contact the department for additional information before registration.

### 5.1.1 Credit for Term Work

In subjects involving written examinations, laboratories, and term assignments, a student may be required to pass each component separately. If no final examination is scheduled in a course, the student's final grade will be determined on the basis of the method of evaluation as announced in the first week of lectures.

If credit is not given for term work, the student's final grade will be determined entirely by the results of the final written examination. Where the final grade is determined from the results of both term work and final examinations, the method of computing the final grade will be as announced within the first week of classes. Should a student write a deferred examination, term grades earned will normally be taken into account as set out in the immediately preceding paragraph.

### 5.1.2 Incomplete term work

A student who is unable to complete the term work prescribed in a course may apply to the instructor prior to the end of lectures for an incomplete grade and time extension for work completion. It is understood that the student is to write the final examination if one is scheduled for the course.

Taking into account the results of the final examination, the value of the term work completed, and the extent of the incomplete term work, the instructor shall calculate the temporary grade using a zero value for incomplete work. In no case will the satisfaction of the incomplete requirements cause a grade to be lowered.

The following maximum time extensions are allowed: August 1, for courses terminated in April; December 1, for courses terminated between May and August; April 1, for courses terminated in December. If a final grade is not reported within one month of the extension deadline, the letter "I" will be dropped, and the grade will remain as awarded. The student's opportunity to improve the grade will have lapsed.

### 5.1.3 Repeating a Course

Subject to faculty or school regulations, required courses graded "F" or "D" must be repeated, usually at the next opportunity. Elective courses graded "F" may either be repeated or another elective substituted. All electives in a program must be approved by the faculty or school.

When a course has been repeated, the last grade achieved is that which will be calculated in the GPA.

### 5.1.4 Probation and Academic Suspension

Failure to meet minimum levels of performance as specified in the regulations of the faculty or school will result in a student being placed either on probation or academic suspension in accordance with the faculty or school regulations.

A student's status is determined, following final examinations, at the end of each term (Fall, Winter or Summer terms) or at the end of an academic session as specified in faculty regulations. A student placed on probation is advised to discuss his/her program prior to the next registration with a representative of the dean or director to determine which courses, if any, should be repeated.

A student placed on academic suspension will normally be permitted to apply for re-entry to the faculty or school after one year has elapsed, but reinstatement is not automatic and individual faculty or school regulations must always be consulted.

While on suspension, students are not normally admissible to another faculty or school.

### 5.1.5 Release of Grades

Grades will be posted on the Aurora Student website when received. This may be a few days after classes for some courses and up to a few weeks after final examinations for others.

Students may access their grades through Aurora Student. Click on Enrolment and Academic Records, Student Records, Final Grades.

## 5.2 Examinations,

### 5.2.1 Examination Schedules

For most faculties/schools, final examinations are conducted in December for Fall Term courses; and in April/May for Winter Term and Fall/Winter Term courses. Check the Academic Schedule of the University for the exact time periods. A Preliminary Examination Timetable is posted approximately one month after the beginning of the term. The Final Examination Timetable, which contains the exact times and locations for each course and section, is posted by the Registrar's Office approximately six to eight weeks prior to each examination period. The examination timetable is available on the Registrar's Office Website ([umanitoba.ca/registrar](http://umanitoba.ca/registrar)). **Students must remain available until all examination and test obligations have been fulfilled.**

### 5.2.2 Examination General Regulations

Any test(s) which have an aggregate value of more than 20% of the total value of the course may not be scheduled to take place during the 14 calendar days ending with the last day of classes in the term during the Fall/Winter Sessions as defined in the *Calendar*, or during the last two classes of



Summer Evening and the last three classes of Summer terms.

No project or assignment may be announced during the periods outlined above, unless contained in the information required to be provided to all students during the first week of classes (See the Responsibilities of Academic Staff to Students in the chapter on Policies and Guidelines of the University).

### 5.2.3 Final Examinations

No final examinations or term or take home examinations shall be scheduled to occur prior to the examination periods as described in the *Calendar* except with the expressed consent of the deans and directors involved.

The weight of each question shall be clearly indicated on the examination paper.

The name of the instructor or the examination committee shall be clearly indicated on the examination paper

Students (with the exception of students auditing courses) are required to write all final examinations. Those who absent themselves without an acceptable reason will receive a grade classification of "NP" accompanied by a letter grade based on term work completed for the course using a zero value for incomplete term work and for the final examination. If no credit for term work is involved, a grade of "F" will be assigned. Under certain conditions a student may apply for a deferred examination; see Deferred Examinations.

Examinations are scheduled at the end of each term of registration.

Students are not permitted to leave an examination within the first 30 minutes and any student arriving more than 30 minutes after the commencement, but before the end, of a final examination scheduled by the Registrar's Office, might not be permitted to write that examination on the authority of the chief invigilator of the examination room.

Provided fairness is guaranteed beforehand, miniature electronic calculators shall be allowed during examinations, with the consent of the department.

Students are not permitted to bring in any unauthorized materials to an examination. This includes, but is not limited to, calculators, books, notes, or any electronic device capable of wireless communication and/or storing information (e.g. translator, cell phone, pager, PDA, MP3 units, etc.). However, students may bring in such material or devices when permission has been given by the instructor and/or the department or faculty.

Students are encouraged not to bring any valuables to the examination room. Items which you are prohibited from possessing during the test may be left at the front of the examination room. These items will not be secured, and the

University accepts no responsibility for items lost or stolen from the examination room.

The use of audio visual supports (including, but not limited to overhead or slide projectors, and audio/visual tape players) to display examination or test questions shall be prohibited except where arrangements have been made to display all questions simultaneously for the entire examination/ test period or in courses where time limited identification is a legitimate and specified part of the examination/test process.

Answers to examination questions shall not be posted prior to the conclusion of the examination.

Final grades must be posted by faculties and schools (identifying students by student number only) as soon as the grades have been approved by the faculty/school/department (as appropriate) and have been submitted to the Registrar's Office. (This policy is under review).

### 5.2.4 Student Access to Final Examinations

In order to allow proper feedback, students shall have an opportunity to read their own final examination script and any comments written on it prior to the deadline for a formal grade appeal, but only in the presence of the instructor or a department-appointed staff member.

### 5.2.5 Special Examination - Religious Reasons

A student who, because of religious obligations, is unable to write a final examination when scheduled, shall be given an opportunity to write a special examination. The student is required to give reasonable notice (approximately three weeks) to the head of the department concerned prior to the examination series and to present evidence concerning the religious obligations involved.

### 5.2.6 Deferred Examinations

Policies and procedures with respect to deferred examinations are currently under review.

Students who miss a final examination and wish to apply for a deferred writing must apply to advising office of their faculty or school. University 1 students must contact the [U1 Student Help Centre](#).

### 5.2.7 Supplemental Examinations

A limited number of faculties and schools permit a supplemental examination when a student has failed a course or failed to achieve a satisfactory result. Please refer to the section of the Calendar for your faculty or school for its policy on supplemental examinations. Where a faculty's or school's regulations permit supplemental examinations, students are normally notified of this privilege on their grade statements or by their faculty or school following publication of the grades. Students who are granted supplemental



privileges are normally required to sit the examination within 30 working days from the end of the examination series in which the supplemental grade was received unless the progression rules of a faculty or school require the successful completion of an entire academic year before a student is eligible to proceed into the next. In this case, students are obliged to sit the examination at the next ensuing examination period.

The passing grade in a supplemental examination must be at least "C." Students are normally required to carry a full-time program in order to be eligible. Accordingly, students who are granted incomplete or deferred status may not be eligible. A student may only write a supplemental once in any course; otherwise the course must be repeated.

Students are advised to check with faculty or school offices or consult an advisor as to specific regulations that may apply.

To write a supplemental examination an application must be made to the office of the dean or director and the appropriate fee paid. The application form will be forwarded to the Registrar's Office and the supplemental grade will be submitted following completion of the examination.

### 5.2.8 Special Supervision of Off-Campus Examinations

Students who have been given permission to write deferred or supplemental examinations off-campus may apply to the Registrar's Office to write at an approved centre outside of Winnipeg.

### 5.2.9 Examinations: Personations

A student who arranges for another individual to undertake or write any nature of examination for and on his/her behalf, as well as the individual who undertakes or writes the examination, will be subject to discipline under the university's Student Discipline Bylaw, which could lead to suspension or expulsion from the university. In addition, the Canadian Criminal Code treats the personation of a candidate at a competitive or qualifying examination held at a university as an offence punishable by summary conviction. Section 362 of the code provides:

#### Personation at Examination

Every one who falsely, with intent to gain advantage for him/herself or some other person, personates a candidate at a competitive or qualifying examination held under the authority of law or in connection with a university, college or school or who knowingly avails him/herself of the results of such personation is guilty of an offence punishable on summary conviction. 1953- 54,c.51, s.347.

Both the personator and the individual who avails him/herself of the personation could be found guilty. Summary conviction could result in a fine being levied or up to two years of imprisonment.

### 5.3 Other Forms of Earning Degree Credit, 5.3.1 Letter of Permission for Transfer of Credit

Students in degree programs at this university may take courses at other recognized colleges or universities for transfer of credit provided such courses are approved at least one month prior to the commencement of classes at the other institution by the faculty or school in which they are currently registered. The approval is subject to individual faculty/school regulations and is granted in the form of a Letter of Permission. The student must obtain a Letter of Permission whether or not the course/s being taken are for transfer of credit to the University of Manitoba. Failure to obtain a Letter of Permission may have serious academic implications.

To obtain a Letter of Permission, application must be made to the Registrar's Office as early as possible and at least one month prior to when required at the other institution.

Each application must be accompanied by the appropriate fee. The fees are for each application and a separate application is required for each session and institution regardless of the number of courses being considered. Students planning to seek permission to take courses elsewhere for transfer of credit to the University of Manitoba are cautioned to check the current *Calendar* for the residence and degree requirements of the degree programs in which they are enrolled.

Transferred courses will be given assigned credit hour values and grades. The transferred grade will be included in the student's degree and cumulative GPA.

### 5.3.2 Challenge for Credit

The purpose of Challenge for Credit is to provide students of the university with some means of obtaining academic credit in University of Manitoba courses (not otherwise obtainable as a transfer of credit from other institutions) for practical training and experience, or reading and study previously completed. Students who have registered to challenge would normally not attend classes or laboratories. Courses which have previously been taken at the University of Manitoba may not be challenged for credit.

To be eligible to challenge for credit a student must first be admitted to a faculty or school of the University of Manitoba. Eligible students will be required to demonstrate their competence in the courses which they are challenging for credit. Where formal, written examinations are required, these will be generally scheduled during the regular examination sessions in April/May, June, August, or December.

For information regarding requirements, procedures, applications and fees a student should contact the office of the faculty or school in which the student is enrolled, or in the case of new students, the faculty or school to which the new student has been admitted.



### 5.3.3 Transfer of Credit Between Programs within the University of Manitoba

When students transfer credits into their programs from another faculty or school within the University of Manitoba, the credit hour value used by the faculty or school offering the course is used. That is, there can only be one credit weight designated for a course with a particular course number.

## SECTION 6: Appeals of Grades

### 6.1 Appeals of Grades Received for Term Work,

The appeal of term work returned or made available to students before the last day of classes shall be subject to the policies and procedures established by faculty or school councils.

Students may formally appeal a grade received for term work provided that the matter has been discussed with the instructor in the first instance in an attempt to resolve the issue without the need of formal appeal. Term work grades normally may be appealed up to ten working days after the grades for the term work have been made available to the student.

Students may obtain the form "Application for Appealing a Grade Given for Term Work" from the general office of the department which offered the course. The fee which is charged for each appealed term work grade will be refunded for any grade which is changed as a result of the appeal.

### 6.2 Appeal of Final Grades,

If a student has good reason to believe a mistake has been made in the assessment of the original grade, an appeal of the assigned grade may be made. A student may enter an appeal, through the Registrar's Office, for assessment of one or more grades following the posting of grades by the faculty/school/department. Grades are released by the Registrar's Office as they are received from faculties and schools. A student wishing to make a final grade appeal on a first term course grade must do so within 15 working days of the first day of classes for second term. For second term courses and full courses, the appeal must be made 15 working days following the Victoria Day Holiday.

Students wishing to appeal grades should contact the Registrar's Office to make application. The deadlines for grade appeals fall 15 working days from the first day of second term courses and 15 working days from the Victoria Day Holiday. For 2011-12, these dates are as follows:

Appeal of Fall Term Courses: on or before January 23, 2012

Appeal of Winter Term and Full Courses: on or before June 11, 2012

For more information, including fees, please consult [umanitoba.ca/registrar](http://umanitoba.ca/registrar).

The fee which is charged for each appealed grade will be refunded for any grade which is changed. It should be noted that an appealed grade may not be lowered. Appeal forms may be obtained from the Registrar's Office. Students should note that the deadline for appeal of assigned grades will not be extended for students who are on "hold status" nor will official grades be released by the Registrar's Office until the "hold" has been cleared.

### 6.3 Academic Appeals,

With the exception of decisions on admissions or disciplinary matters, all academic appeals from decisions of faculty or school appeals committees at the University of Manitoba or by the Comité d'appels at Université de Saint-Boniface shall be heard by the Senate Appeals Committee regardless of the institute of registration of the student concerned.

The complete terms of reference for the Senate Committee on Appeals as well as an Appeal Form may be obtained from the Office of the University Secretary, 312 Administration Building or Student Advocacy/Student Resource Services, 519 University Centre.

## SECTION 7: Attendance and Withdrawal

### 7.1 Attendance at Class and Debarment,

Regular attendance is expected of all students in all courses.

An instructor may initiate procedures to debar a student from attending classes and from final examinations and/or from receiving credit where unexcused absences exceed those permitted by the faculty or school regulations.

A student may be debarred from class, laboratories, and examinations by action of the dean/director for persistent non-attendance, failure to produce assignments to the satisfaction of the instructor, and/or unsafe clinical practice or practicum. Students so debarred will have failed that course.

### 7.2 Withdrawal from Courses and Programs,

#### 7.2.1 Voluntary Withdrawal

The [registration revision period](#) extends two weeks from the first day of classes in both Fall and Winter terms. Courses dropped during this period shall not be regarded as withdrawals and shall not be recorded on official transcripts or student histories. The revision period is prorated for Summer terms and for parts of term.

After the registration revision period ends, voluntary withdrawals (VWs) will be recorded on official transcripts and student histories.



The following dates are deadlines for voluntary withdrawals:

- The Voluntary Withdrawal deadline shall be the 48th teaching day in both Fall and Winter term for those half-courses taught over the whole of each term;
- The Voluntary Withdrawal deadline for full-courses taught over both Fall and Winter term shall be the 48th teaching day of the Winter term; and
- The Voluntary Withdrawal deadline for full-and-half courses taught during Summer terms or during some other special schedule shall be calculated in a similar manner using a pro-rated number of teaching days.

The exact Voluntary Withdrawal dates that apply to courses offered in the current academic session are published in the [Academic Schedule](#).

### 7.2.2 Authorized Withdrawal

Subject to the provision of satisfactory documentation to the faculty of registration, Authorized Withdrawals (AWs) may be permitted on medical or compassionate grounds.

### 7.2.3 Required Withdrawal from Professional Programs

Senate, at the request of some faculties and schools, has approved bylaws granting them the authority to require a student to withdraw on the basis of unsuitability for the practice of the profession to which the program of study leads.

This right may be exercised at any time throughout the academic year or following the results of examinations at the end of every year.

This right to require a student to withdraw prevails notwithstanding any other provisions in the academic regulations of the particular faculty or school regarding eligibility to proceed or repeat.

Where Senate has approved such a bylaw, that fact is indicated in the *Calendar* chapter for that faculty or school. A copy of the professional unsuitability bylaw may be obtained from the general office of the faculty or school.

## SECTION 8: Academic Integrity

### 8.1 Plagiarism and Cheating,

Plagiarism or any other form of cheating in examinations, term tests or academic work is subject to serious academic penalty (e.g. suspension or expulsion from the faculty or university). Cheating in examinations or tests may take the form of copying from another student or bringing unauthorized materials into the exam room (e.g., crib notes, pagers or cell phones). Exam cheating can also include exam impersonation. (Please see [Section](#)

[5.2.9/~Catalog/ViewCatalog.aspx?pageid=viewcatalog&amp;p:catalogid=220&topicid=836237&topicgroupid=11826&loadusercredits=true](#) on Exam Personation). A student found guilty of contributing to cheating in examinations or term assignments is also subject to serious academic penalty.

To plagiarize is to take ideas or words of another person and pass them off as one's own. In short, it is stealing something intangible rather than an object. Plagiarism applies to any written work, in traditional or electronic format, as well as orally or verbally presented work. Obviously it is not necessary to state the source of well known or easily verifiable facts, but students are expected to appropriately acknowledge the sources of ideas and expressions they use in their written work, whether quoted directly or paraphrased. This applies to diagrams, statistical tables and the like, as well as to written material, and materials or information from Internet sources.

To provide adequate and correct documentation is not only an indication of academic honesty but is also a courtesy which enables the reader to consult these sources with ease. Failure to provide appropriate citations constitutes plagiarism. It will also be considered plagiarism and/or cheating if a student submits a term paper written in whole or in part by someone other than him/herself, or copies the answer or answers of another student in any test, examination, or take-home assignment.

Working with other students on assignments, laboratory work, take-home tests, or on-line tests, when this is not permitted by the instructor, can constitute Inappropriate Collaboration and may be subject to penalty under the [Student Discipline By-Law](#).

An assignment which is prepared and submitted for one course should not be used for a different course. This is called "duplicate submission" and represents a form of cheating because course requirements are expected to be fulfilled through original work for each course.

When in doubt about any practice, ask your professor or instructor.

The Student Advocacy Office, 519 University Centre, 474-7423, is a resource available to students dealing with Academic Integrity matters.

## SECTION 9: Graduation and Convocation

### 9.1 Graduation,

Students may graduate from the University of Manitoba in May/June, October, and February of each year. (Convocation ceremonies are held in May and October only).

Students are eligible to graduate when they have completed all of the requirements for their degree program in accordance with the regulations described in the chapter



[General Academic Regulations](#) and the regulations available from the general offices of their faculties and schools.

It is the responsibility of each student to be familiar with the graduation requirements of the program in which they are enrolled. Consultation with academic advisors is advised to ensure that graduation requirements are met.

Please refer to the Registrar's Office website ([umanitoba.ca/registrar](http://umanitoba.ca/registrar); click on Graduation and Convocation for answers to frequently asked questions about Graduation).

### 9.2 Application for Graduation,

Every candidate for a degree, diploma or certificate must make formal application at the beginning of the session in which he/she expects to complete graduation requirements.

Application is to be made through Aurora Student. (Log into Aurora Student; click Enrolment and Academic Records, then Declarations then Declare Graduation Date.)

Deadline to Apply for Fall 2012 Graduation: July 26, 2012

Deadline to Apply for February 2013 Graduation: September 19, 2012

Deadline to Apply for Spring 2013 Graduation: January 18, 2013

### 9.3 Changing a Graduation Date,

If you need to change your graduation date after you have made your declaration, you must contact the general office of your faculty or school as soon as possible.

### 9.4 Receipt of Information about Graduation,

After you have declared your graduation, you will be sent a series of e-mails requesting you to verify your full legal name, asking you about your attendance at convocation, providing convocation information, and so on. **It is imperative that you activate your University of Manitoba e-mail account and check it regularly.**

### 9.5 Convocation,

Convocation ceremonies are held in May/June and October of each year. Correspondence with students who declare intention to graduate will be by email. Please be sure you have claimed your University of Manitoba computer account.

February graduates are included in the May ceremonies.

Graduating students are encouraged to attend with their families and friends because it is the one ceremonial occasion that marks the successful conclusion of their program of studies.

All prospective graduating students who apply for graduation will be asked to confirm by email their intention to attend Convocation.

Complete details of the time, location, and ceremony arrangements will be included in the material sent by email from the Convocation Office in the Office of Registrar.

Students who, for any reason, do not attend Convocation will receive their degrees in absentia.

The Registrar's Office will hold unclaimed parchments for a maximum of twelve months after graduation when any unclaimed parchments will be destroyed. These will include those not given at Convocation, those that were to be picked up in person but not claimed, those that were mailed but returned to the Registrar's Office by the postal outlet or courier depot, those that were not issued due to a financial hold on a student's records, and those that were reprinted immediately after convocation due to corrections.

It is critical that you update your address, phone number and email through Aurora whenever changes occur. Note that any changes made with the Alumni Association are not reflected in your University of Manitoba student records.

If you do not receive your parchment, it is your responsibility to follow up with the Registrar's Office within a twelve-month period. Any requests for parchments after this time will be processed as replacements; there is a fee charged for replacement parchments.

### 9.5.1 Academic Dress

Academic gowns, hoods, and caps are provided by the university as part of the Convocation arrangements.

### 9.5.2 Convocation Information

Information on Convocation may be obtained from the Registrar's Office, 400 University Centre.

## SECTION 10: Personal Information

You may make changes to your personal information by accessing Aurora Student and then selecting Personal Information.

### 10.1 Mailing Address,

In order to receive University mail, it is essential that you to provide the Registrar's Office with your current address. All mail will be directed to the address you provide.

**10.2 Change of Name,**

If you have changed your name since you were first admitted or if the name on your record is incomplete or inaccurate, official evidence of the name change or correction must be submitted to the Registrar's Office along with a completed Request for [Change of Name form](#). The University of Manitoba uses your **full legal name** on its records, transcripts, and graduation documents ( a full legal name, for example, includes all names on your birth certificate - first, middle, and last - or on your study permit). Abbreviated names, anglicized names, or initials should not be used unless they have been proven with appropriate documentation.



## Undergraduate Studies

### Academic Programs

Undergraduate Programs Offered,  
The following is a listing of all degree, diploma and certificate programs offered at the Fort Garry Campus, the Bannatyne Campus and at Université de Saint-Boniface.

#### Agricultural and Food Sciences, Faculty of

[Science in Agribusiness, Bachelor of](#)

[Science in Agriculture, Bachelor of](#)

[Science in Agroecology, Bachelor of](#)

[Science in Food Science, Bachelor of](#)

[Agriculture, Diploma in](#)

#### Architecture, Faculty of

[Environmental Design, Bachelor of](#)

#### Art, School of

[Fine Arts \(Honours\), Bachelor of](#)

[Fine Arts \(Honours\) \(Art History\), Bachelor of](#)

[Fine Arts, Bachelor of](#)

[Fine Arts \(Art History\), Bachelor of](#)

[Art, Diploma in](#)

#### Arts, Faculty of

[Arts \(Honours\), Bachelor of](#)

[Arts \(Advanced\), Bachelor of](#)

[Arts , Bachelor of](#)

[Arts \(Integrated Studies\), Bachelor of](#)

#### Université de Saint-Boniface

Please see chapter for programs offered at [Université de Saint-Boniface](#)

#### Dental Hygiene, School of

[Science in Dental Hygiene, Bachelor of](#)

[Dental Hygiene, Diploma in](#)

#### Dentistry, Faculty of

[Dental Medicine, Doctor of](#)

[Science in Dentistry, Bachelor of](#)

#### Education, Faculty of

[Education, Bachelor of](#)

[Education, Post-Baccalaureate Certificate in](#)

[Education, Post-Baccalaureate Diploma in](#)

[Music, Bachelor of/Bachelor of Education \(Integrated\)](#)

#### Engineering, Faculty of

[Science in Engineering \(Biosystems\), Bachelor of](#)

[Science in Engineering \(Civil\), Bachelor of](#)

[Science in Engineering \(Computer\), Bachelor of](#)

[Science in Engineering \(Electrical\), Bachelor of](#)

[Science in Engineering \(Manufacturing\), Bachelor of](#)

[Science in Engineering \(Mechanical\), Bachelor of](#)

#### Environment, Earth, & Resources, Clayton H. Riddell Faculty of

[Arts in Geography \(Honours\), Bachelor of](#)

[Arts in Geography \(Advanced\), Bachelor of](#)

[Arts in Geography, Bachelor of](#)

[Environmental Science \(Honours\), Bachelor of](#)

[Environmental Science \(Major\), Bachelor of](#)

[Environmental Science, Bachelor of](#)

[Environmental Studies \(Honours\), Bachelor of](#)



[Environmental Studies \(Major\), Bachelor of](#)

[Environmental Studies, Bachelor of](#)

[Science in Geological Sciences \(Honours\), Bachelor of](#)

[Science in Geological Sciences \(Major\), Bachelor of](#)

[Science in Geological Sciences, Bachelor of](#)

[Science in Physical Geography \(Honours\), Bachelor of](#)

[Science in Physical Geography \(Major\), Bachelor of](#)

**Extended Education, Division of**

[Aboriginal Child & Family Services Diploma](#)

[Aboriginal Community Wellness Diploma](#)

[Labour Relations & Workplace Safety, Diploma in](#)

**Human Ecology, Faculty of**

[Health Sciences, Bachelor of](#)

[Health Studies, Bachelor of](#)

[Human Ecology \(Family Social Sciences\), Bachelor of](#)

[Human Ecology, Bachelor of](#)

[Science \(Textile Sciences\), Bachelor of](#)

[Science in Human Nutritional Sciences, Bachelor of](#)

**Kinesiology & Recreation Management, Faculty of**

[Kinesiology, Bachelor of](#)

[Physical Education, Bachelor of](#)

[Recreation Mgmt & Community Development, Bachelor of](#)

**Law, Faculty of**

[Laws, Bachelor of](#)

[Juris Doctor](#)

**Management, Faculty of/I.H. Asper School of Business**

[Commerce \(Honours\), Bachelor of](#)

**Medical Rehabilitation, School of**

[Medical Rehabilitation \(Physical Therapy\), Bachelor of](#)

[Medical Rehabilitation \(Respiratory Therapy\), Bachelor of](#)

**Medicine, Faculty of**

[Medicine, Doctor of](#)

[Science in Medicine, Bachelor of](#)

**Music, Marcel A. Desautels Faculty of**

[Jazz Studies, Bachelor of](#)

[Music, Bachelor of /Bachelor of Education \(Integrated\)](#)

[Music \(Composition\), Bachelor of](#)

[Music \(History\), Bachelor of](#)

[Music \(Performance\), Bachelor of](#)

[Music, Bachelor of](#)

[Performance, Post-Baccalaureate Diploma in](#)

**Nursing, Faculty of**

[Nursing, Four-Year Bachelor of](#)

[Nursing, Bachelor of BPRN](#)

**Pharmacy, Faculty of**

[Science in Pharmacy, Bachelor of](#)

**Science, Faculty of**

[Computer Science \(Honours\), Bachelor of](#)

[Science \(Honours\), Bachelor of](#)

[Science \(Major\), Bachelor of](#)

[Science, Bachelor of](#)

**Social Work, Faculty of**

[Social Work, Bachelor of](#)



## Areas of Study

Each Faculty/School chapter includes a list (where applicable) of Majors, Minors, Concentrations and Focuses which may be included in their degree programs.

Alphabetical Listing of Subjects,

Subject	Code	Faculty/School
Accounting	ACC	Management
Actuarial Studies Warren Centre	ACT	Management
Agribusiness and Ageconomics	ABIZ	Agricultural and Food Sciences
Agroecology	AGEC	Agricultural and Food Sciences
Agriculture, General	AGRI	Agricultural and Food Sciences
Agriculture Diploma	DAGR	Agricultural and Food Sciences
Anatomy	ANAT	Medicine
Anesthesia	ANES	Medicine
Animal Science	ANSC	Agricultural and Food Sciences
Anthropology	ANTH	Arts
Applied Mathematics	AMAT	Science
Arabic	ARA	Arts
Architecture	ARCG	Architecture
Architecture Interdisciplinary	ARCH	Architecture
Arts Interdisciplinary	ARTS	Arts
Asian Studies	ASIA	Arts
Biochemistry and Medical Genetics	BGEN	Medicine
Biological Sciences	BIOL	Science
Biosystems Engineering	BIOE	Agricultural and Food Sciences
Biotechnology	BTEC	Science
Canadian Studies	CDN	Arts
Catholic Studies	CATH	Arts
Chemistry	CHEM	Science
City Planning	CITY	Architecture
Civil Engineering	CIVL	Engineering
Classical Studies	CLAS	Arts
Community Health Sciences	CHSC	Medicine
Computer Science	COMP	Science
Dental Diagnostic and Surgical	DDSS	Dentistry
Dental Hygiene	HYGN	Dental Hygiene
Dentistry	DENT	Dentistry
Diagnostic Cytology	CYTO	Medical Rehabilitation
Diploma in Agriculture	AGRI	Agricultural and Food Sciences
Disability Studies	DS	Disability Studies
Economics	ECON	Arts
Education Ph.D.	EDUC	Education
Educational Administration, Foundations and Psychology	EDUA	Education
Education: Curriculum, Teaching and Learning	EDUB	Education
Electrical Engineering	ECE	Engineering
Engineering - Preliminary Year	ENG	Engineering
English	ENGL	Arts
Entomology	ENTM	Agricultural and Food Sciences
Entrepreneurship/Small Business	ENTR	Management
Environment	ENVR	Environment, Earth, and Resources
Environment, Earth, and Resources	EER	Environment, Earth, and Resources
Environmental Architecture	EVAR	Architecture
Environmental Design	EVDS	Architecture
Environmental Interior Environment	EVIE	Architecture
Environmental Landscape and Urbanism	EVLU	Architecture
Family Social Sciences	FMLY	Human Ecology
Film Studies	FILM	Arts
Finance	FIN	Management



Fine Art General Courses	FA	Art
Fine Art Diploma	FNDP	Art
Fine Art: Art History	FAAH	Art
Fine Art Studio Courses	STDO	Art
Food Science	FOOD	Agricultural and Food Sciences
Forensic Sciences	FORS	Science
French	FREN	Arts
General Agriculture	AGRI	Agricultural and Food Sciences
General Human Ecology	HMEC	Human Ecology
General Management	GMGT	Management
Geography	GEOG	Environment, Earth, and Resources
Geological Sciences	GEOG	Environment, Earth, and Resources
German	GRMN	Arts
Global Political Economy	GPE	Arts
Graduate Studies	GRAD	Graduate Studies
Greek	GRK	Arts
Health Studies	HEAL	Human Ecology
Hebrew	HEB	Arts
History	HIST	Arts
Human Nutritional Sciences	HNSC	Human Ecology
Human Resources Management/Industrial Relations	HRIR	Management
Hungarian	HUNG	Arts
Icelandic	ICEL	Arts
Immunology	IMMU	Medicine
Interdisciplinary Management	IDM	Management
Interdisciplinary Medicine	IMED	Medicine
Interior Design	IDES	Architecture
International Business	INTB	Management
Italian	ITLN	Arts
Judaic Civilization	JUD	Arts
Kinesiology	KIN	Kinesiology and Recreation Management
Labour Studies	LABR	Arts
Landscape Architecture	LARC	Architecture
Latin	LATN	Arts
Law	LAW	Law
Linguistics	LING	Arts
Management Information Systems	MIS	Management
Management Science	MSCI	Management
Marketing	MKT	Management
Mathematics	MATH	Science
Mechanical Engineering Graduate	MECG	Engineering
Mechanical Engineering Undergraduate	MECH	Engineering
Medical Microbiology	MMIC	Medicine
Medical Rehabilitation	REHB	Medical Rehabilitation
Medicine	MED	Medicine
Microbiology	MBIO	Science
Music	MUSC	Music
Native Studies	NATV	Arts
Nursing	NURS	Nursing
Occupational Therapy	OT	Medical Rehabilitation
Operations Management	OPM	Management
Oral Biology	ORLB	Dentistry
Pathology	PATH	Medicine
Peace Studies	PEAC	Graduate Studies
Pharmacology	PHAC	Medicine
Pharmacy	PHRM	Pharmacy
Philosophy	PHIL	Arts
Physical Education	PHED	Kinesiology and Recreation Management
Physical Education and	PERS	Kinesiology and Recreation Management
Recreation Studies General		
Physical Therapy	PT	Medical Rehabilitation
Physics and Astronomy	PHYS	Science
Physiology	PHGY	Medicine
Plant Science	PLNT	Agricultural and Food Sciences



Polish	POL	Arts
Political Studies	POLS	Arts
Portuguese	PORT	Arts
Post Graduate Medical Education	PGME	Medicine
Preventive Dental Science	PDSD	Dentistry
Psychiatry	PCTY	Medicine
Psychology	PSYC	Arts
Recreation	REC	Kinesiology and Recreation Management
Religion	RLGN	Arts
Resource Management	NRI	Environment, Earth, and Resources
Respiratory Therapy	RESP	Medical Rehabilitation
Restorative Dentistry	RSTD	Dentistry
Russian	RUSN	Arts
Slavic Studies	SLAV	Arts
Social Work	SWRK	Social Work
Sociology	SOC	Arts
Soil Science	SOIL	Agricultural and Food Sciences
Spanish	SPAN	Arts
Statistics	STAT	Science
Supply Chain Management	SCM	Management
Surgery	SURG	Medicine
Textile Sciences	TXSC	Human Ecology
Theatre	THTR	Arts
Ukrainian	UKRN	Arts
Ukrainian Canadian Heritage Studies	UCHS	Arts
Undergraduate Medical Education	UGME	Medicine
Women's and Gender Studies	WOMN	Arts
Yiddish	YDSH	Arts



## Admissions

424 University Centre  
University of Manitoba, Winnipeg, MB R3T 2N2 Canada  
Phone: (204) 474-8808 Fax: (204) 474-7554  
Toll Free: 1-800-224-7713 **Email Admissions**

### SECTION 1: Welcome

You are joining a vibrant community of over 27,000 students and 8,000 academic and support staff members that emphasizes excellence in teaching, learning, and research.

The University of Manitoba is a community of people who study, teach, conduct research, and create music and art, and whose ideas and accomplishments have an impact on our society and culture both here in Manitoba and in the wider world.

The University of Manitoba is the province's largest university and the first to be established in western Canada.

The majority of new University of Manitoba students will enter University 1, an innovative program that was specially designed to provide choice and flexibility. University 1 gives you the opportunity to begin your university studies with a year of personal and academic exploration. Advisors are available to provide academic advice and assistance. During the campus wide orientation that begins your first academic year, you will be introduced to the wide range of campus support services that can help you with all aspects of student life.

If you are joining the University of Manitoba after completing some college or university courses at another institution, you are equally welcome as you continue your studies.

This book, the *Undergraduate Calendar*, provides the basic information on admission requirements. More specific information on admission requirements and the application process can be found in the applications themselves and their accompanying guides and/or bulletins. These can be downloaded from our website at [umanitoba.ca/admissions](http://umanitoba.ca/admissions). In addition, there are advisors in the general offices of all academic units who are ready to answer your questions and to help you understand policies and regulations that affect you.

Again, welcome to the University of Manitoba. You are joining a large community of students and scholars, and when you graduate you will be joining an even larger community of graduates.

**The University of Manitoba is honored to provide you with your education.**

### SECTION 2: An Overview of Undergraduate Admission

The twenty-two faculties and schools of the University of Manitoba offer over 60 different undergraduate programs. Some of these programs are open to high school graduates, or to mature status applicants, while others require a year or more of university-level studies as preparation for admission.

There are several programs that offer direct entry options for qualified high school graduates, see Section 3: Direct Entry Options for the list of these programs. The majority of high school students applying to the University of Manitoba choose University 1, a first year program designed to provide a foundation for studies in Arts, Science, and the professional disciplines.

Many programs offer only an 'advanced entry' option and accept applications from students who have completed a year or more in university-level studies, either in University 1 (or another program at the University of Manitoba) or at another recognized university or college. These programs are listed in Section 4: Advanced Entry Options.

The programs offering the 'direct entry' option also offer an 'advanced entry' option for students who wish to start in University 1 and then select their degree program in second year.

In addition, students can also apply as Auditing, Visiting, or Special Students (see Section 5: Other Admission Categories). Usually students in these applicant categories will apply to General Studies (Extended Education) which they can take degree credit courses in a variety of disciplines to meet entrance requirements for a future degree application or to meet career development and personal goals.

The main criterion for admission for direct and advanced entry programs is the scholastic achievement of the student. In instances such as the Marcel A. Desautels Faculty of Music and the School of Art, additional criteria designed to assess the student's suitability for education are applied.

Most faculties and schools in the University of Manitoba have enrolment limitations, and a process of selection is applied by the university. In some programs the number of students applying for admission greatly exceeds the number which the university is able to admit. Selection, therefore, is based upon scholastic achievement and suitability for the discipline. In some faculties and schools first consideration is given to residents of Manitoba who are Canadian Citizens or Permanent Residents. A limited number of places may be assigned to Canadian Citizens or Permanent Residents who are resident outside Manitoba or to those who are not Canadian Citizens/Permanent Residents. The William and Catherine Booth College (approved teaching centre) and [Université de Saint-Boniface](#) (an affiliated college) are not limited in their enrolment, and interested students are directed to those institutions for information.



Many of the first-year level courses in mathematics and the sciences at the University of Manitoba will have high school subject prerequisites. These prerequisites are listed in the course descriptions sections of this calendar.

All applicants whose primary language is not English must fulfill the English language proficiency requirements described in Section 7: English Language Proficiency.

### SECTION 3: Direct Entry Options

*Comprehensive information on the entrance requirements, application process, and deadlines for each of these programs is found at [www.umanitoba.ca/admissions](http://www.umanitoba.ca/admissions).*

The following faculties and schools offer direct entry programs which accept students graduating from Manitoba high schools (or the equivalent in other provinces/countries):

University 1  
School of Agriculture (diploma program)  
School of Art (Fine Arts studio degree programs)  
School of Art (Fine Arts diploma program)  
Asper School of Business  
School of Dental Hygiene  
Faculty of Engineering  
General Studies (Extended Education)  
Faculty of Human Ecology  
Faculty of Kinesiology & Recreation Management (except Athletic Therapy)  
Marcel A. Desautels Faculty of Music  
Faculty of Science

Students applying from high school to a direct entry program must meet two levels of requirements:

- The general entrance requirements
- The specific subject and performance requirements of the program for which admission is sought.

Some University of Manitoba undergraduate courses, particularly mathematics and science courses, will have specific high school courses as prerequisites to register in these courses. These prerequisites may not be required for admission to the direct entry program, but are required for course registration. If students have not completed the necessary high school courses, they can complete a preparatory upgrading course at U of M. See our website for listings of these high school prerequisites.

These programs also accept transfer students; see Section 4: Advanced Entry Options.

## 3.1 General Entrance Requirements,

### 3.1.1 Manitoba High School Students - General Entrance Requirements

Applicants must present Manitoba high school graduation, with five full credits at the Grade 12 level, in courses designated S (Specialized), G (General), or U (Dual Credit – University), and with a minimum of three of these credits in S or U courses. Manitoba and northwest Ontario (Thunder Bay and west) high school students will be selected on the basis of an average calculated on three courses specified by each faculty or school. Although the remaining courses offered will not be used in the computation of the average, each must bear at least a passing grade.

#### 3.1.2 Other Canadian High School Students - General Entrance Requirements

The following certificates are usually accepted as equivalent to Manitoba high school standing and will, therefore, meet the university's general entrance requirements for students from that region..

*Alberta:* High school graduation with a minimum overall average of 60 percent on five acceptable Grade 12 credits .

*British Columbia:* High school graduation with a minimum average of 60 percent or better over four acceptable Grade 12 credits.

*New Brunswick:* High school graduation with a minimum average of 60 percent over six acceptable Grade 12 credits.

*Newfoundland:* High school graduation with a minimum average of 60 percent over ten acceptable Grade 12 credits.

*Northwest Territories:* High school graduation with a minimum average of 60 percent over five acceptable Grade 12 credits.

*Nova Scotia:* High school graduation with a minimum average of 60 percent over five acceptable Grade 12 credits.

*Nunavut:* High school graduation with a minimum average of 60 percent over five acceptable Grade 12 credits.

*Ontario:* High school graduation with a minimum average of 60 percent over six Grade 12 U or M courses.

*Prince Edward Island:* High school graduation with a minimum average of 60 percent in a university entrance program.

*Quebec:* First-year CEGEP with satisfactory standing (normally a GPA of 2.0 or better or 65 percent or better).

*Saskatchewan:* High school graduation with a minimum average of 65 percent on seven acceptable Grade 12 credits.

*Yukon Territory:* High school graduation with a minimum average of 60 percent or better over four acceptable Grade 12 credits.



### 3.1.3 Countries and Regions outside Canada - General Entrance Requirements

The following certificates are usually accepted as equivalent to Manitoba high school standing and will, therefore, meet the university's general entrance requirements for students from that region.

Please see

[www.umanitoba.ca/student/admissions/international/requirements.shtml](http://www.umanitoba.ca/student/admissions/international/requirements.shtml) for additional listings.

*British-patterned education:* (United Kingdom and most Commonwealth countries except as noted separately below) General Certificate of Education, with two subjects at Advanced Level and three at Ordinary Level, or three subjects at Advanced Level and one at the Ordinary Level, with a C overall average; no subject accepted below a D grade. Acceptable alternative: U.K. Higher National Diploma or Certificate.

*French-patterned education:* (Algeria, Cote d'Ivoire, Cambodia, France, French Guinea, Haiti, Laos, Morocco) Diploma de Bachelier de l'Enseignement du Second Degree (Baccalaureate Parts I and II)

*Latin America:* (Costa Rica, Guatemala, Honduras, Nicaragua, Peru, Venezuela: all others see individual listings below) first year at a recognized university in the same country

*Middle East:* (Bahrain, Iran, Iraq, Jordan, Kuwait, Libya, Oman, Qatar, Saudi Arabia, Syria, Sudan, United Arab Emirates, Yemen): all others see individual listing below: national secondary school certificate

*Russian-patterned education:* (Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Uzbekistan) Attestate o Srednem (Polnom) Certificate and complete General Secondary Education

*Yugoslavian-patterned education:* (Bosnia-Herzegovina, Croatia, Macedonia, Serbia, Slovenia, Yugoslavia) Matura/Secondary School Leaving Diploma

*International Baccalaureate:* three courses at the Higher Level and three courses at the Standard Level with a minimum score in each subject of four and an overall minimum score of 24. Advanced credit may be granted for selected Higher and Standard Level courses with minimum scores of four in specific subject areas.

*Argentina:* Bachillerato or Bachillerato Especializada with a minimum 6 average or the examination Ciclo Basico Comun with a 5 average

*Australia:* matriculation as defined by the home state university

*Bangladesh:* Higher Secondary Certificate (HSC) in at least the second division

*Brazil:* Certificado de Conclusao de Grau or a Diploma de Tecnico de Nivel Medio with a minimum 6.5 average or the examination Concurso Vestibular with a minimum 5 average

*China:* Senior Middle School Diploma

*Czech Republic:* Maturitni Zkouska (Maturita)

*El Salvador:* Bachillerato in the academic specializations only with a minimum 6.5

*Ethiopia:* first year standing at a recognized university in the same country

*Germany:* Reifezeugnis

*Greece:* Apolytirion

*Hong Kong:* HKDSE/HKCEE Diploma, with at least two HKALE level subjects and three HKCEE level subjects with a minimum overall average of a 'C' and no grade below a 'D'. Two HKASLE level subjects will be held equivalent to one HKALE level subject.

*India:* second division or higher in one of: All-Indian Senior School Certificate, Higher Secondary Certificate (Pre-Degree, Pre-Professional or Pre-University), Intermediate Certificate, Higher Secondary Certificate Part 2

*Indonesia:* Sekolah Menengah Uman (S.M.U.)

*Ireland:* (Republic of) Leaving Certificate

*Israel:* Bagrut Certificate

*Italy:* Maturita Classica Diploma or Maturita Scientifica Diploma

*Japan:* Upper Secondary School Diploma

*Kenya:* Kenya Certificate of Secondary Education (KCSE)

*Malaysia:* Sijil Tinggi Persekolahan Malaysia (STPM) or MICSS Unified Examination Certificate (UEC)

*Mexico:* Bachillerato certificate with a minimum 7.0 average

*Nigeria:* Senior School Certificate with WAEC results

*Pakistan:* Higher Secondary School Certificate (HSC) in at least the second division



*Philippines:* first year standing at a recognized institution of higher learning

*Poland:* Maturity/Swiadectwo Dojrzalosci Certificate

*Portugal:* first year standing at a recognized university in the same country

*Singapore:* Government Higher School Certificate (Chinese) with two subjects at the Principal Level and three subjects at the Subsidiary Level

*Slovak Republic:* Maturity Certificate (Maturitnej Skuske)

*Somalia:* First year university standing

*South Korea:* Academic Upper Secondary School Certificate (Immumgye Kodung Hakkyo Choeupchang)

*Spain:* Titulo de Bachillerato or University Orientation Year

*Taiwan:* Senior High School Leaving Certificate

*Thailand:* Mathayom /Maw 6

*Ukraine:* Atestat pro Povnu Zagalnu Sersdniu Osvitu (Grade 12)

*United States of America (and Puerto Rico):* complete Grade 12 with a minimum average of C or better on a minimum of five academic Grade 12 subjects

**Not Acceptable:** The following qualifications by themselves are not acceptable as a basis of admission: GCE (O) levels only; West African School Certificate; Hong Kong Certificate of Education; Ordinary Diploma and Technician Diploma; Malaysian Technical Diploma; U.K. City and Guilds Certificate; U.K. College of Preceptors Licentiate; U.K. Ordinary National Certificate or Diploma; West Indies CXC.

Graduates from international schools overseas will be considered for admission only if they are eligible for admission to a major university of their country of citizenship; or they have successfully completed an internationally examined curriculum such as the GCE or IB diploma, or they have successfully completed the formal graduation requirements of a Canadian provincial ministry of education in an approved institution. ([See 3.1.2 for minimum requirements.](#))

### 3.1.4 International Baccalaureate Students - General Entrance Requirements

To meet the General Requirements, an I.B. student must present three courses at the Higher Level and three courses at the Standard Level, with a minimum score in each subject

of four and an overall minimum score of 24. Credit may be granted for selected Higher and/or Standard Level courses with minimum scores of four in specific subject areas; see [6.1 Advanced Standing for High School Students.](#)

### 3.1.5 Mature Student Status

Mature student status is granted to one who:

- Does not meet the normal entrance requirements;
- Is at least 21 years of age (before May 1 for admission to classes beginning in May; before July 1 for classes beginning in July; before September 30 for the Fall term; and before January 31 for the Winter term, and,
- Is either a Canadian citizen, or a permanent resident of Canada.

Mature status students may apply to any of the following direct entry programs: [University 1](#), [Engineering](#), [Fine Arts \(diploma program\)](#), and [Music](#). Members of the Canadian Military are also eligible to apply to General Studies ([Extended Education](#)) and Faculties of [Arts](#) and [Science](#) as mature students. Applicants to [Engineering](#) are required to meet the specific high subject requirements of that Faculty, i.e. a minimum of 60% in each of Chemistry 40S, Pre-Calculus Math 40S, and Physics 40S (or the equivalent) plus a minimum 85% average over these subjects.

Applicants who have completed 24 credit hours or more of course work at another post-secondary institution are not normally eligible for mature student status admission. These applicants should apply to one of the 'advanced entry' programs.

Applicants who do not qualify for consideration for admission under the mature status requirements must meet the regular high school entrance requirements applicable to their chosen faculty or school.

Applicants seeking admission under mature student status are encouraged to seek further information from the Admissions Office.

### 3.2 Specific Subject Requirements and Performance Levels for Admission to Direct Entry Options,

In addition to the General Entrance Requirements listed above by Geographic region, applicants must meet the Specific Subject Requirements for their selected program. The requirements are listed for Manitoba high school students, the equivalent from other provinces and countries are acceptable.

#### 3.2.1 University I

General Entrance Requirements as listed above, plus completion of ONE of the following sets of requirements:

- Set A: One credit of Grade 12 S or U English with a minimum grade of 60%, and



a minimum average of 70% over three Grade 12 S or U credits OR

- Set B: One credit of Grade 12 S or U English, with a minimum grade of 60%, and a minimum average of 63-69.9% over three Grade 12 S or U credits OR
- Set C: A minimum average of 70% over three Grade 12 S or U credits, but lacking the Grade 12 S or U English requirement.

International applicants from other countries should qualify under Set A above.

**NOTE:** Admission under Set B or C will be considered a limited admission to University 1; some registration restrictions and performance standards will apply, and additional academic supports and services will be provided. See the University 1 section of this *Calendar* for further details on limited admission.

### 3.2.2 School of Agriculture (diploma program)

For admission for September 2012: High school graduation with Grade 12 English 40S, Mathematics 40S or 45S, and a science 40S are recommended. Applications will also be accepted from students who have not graduated from high school but an interview will be required.

For admission for September 2013: General Entrance Requirements as listed above, plus a minimum average of 60% over the following three courses: English 40S, mathematics (40S or 45S), and a science 40S. Applications will also be accepted from students who do not meet these requirements but an interview will be required.

### 3.2.3 Agriculture & Food Science (degree programs)

General Entrance Requirements as listed above, plus a minimum 85% average over the following courses, with no less than 60% in each course:

- a. English 40S
- b. one of: Pre-Calculus Mathematics 40S or Applied Mathematics 40S
- c. one of: Chemistry 40S, Physics 40S, Biology 40S, or Computer Science 40S

### 3.2.4 School of Art (Fine Arts studio degree programs)

General Entrance Requirements as listed above, plus the same specific subject requirements and performance levels as University 1. Portfolios are required from all applicants ([www.umanitoba.ca/schools/art](http://www.umanitoba.ca/schools/art)). Grade 12 Art is recommended.

### 3.2.5 School of Art (Fine Arts diploma program)

Candidates should meet the General Entrance Requirements as listed above, plus the same specific subject requirements and performance levels as University 1, but applications for the diploma program will be accepted from students who have not graduated from high school or who do not meet the University 1 requirements. Portfolios are required from all applicants ([www.umanitoba.ca/schools/art](http://www.umanitoba.ca/schools/art)). Grade 12 Art is recommended.

### 3.2.6 Asper School of Business

General Entrance Requirements as listed above, plus a minimum 85% average over the following courses, with no less than 60% in each course:

- a. English 40S
- b. one of: Pre-Calculus Mathematics 40S (recommended) or Applied Mathematics 40S
- c. a third 40S course

### 3.2.7 School of Dental Hygiene

General Entrance Requirements as listed above, plus a minimum 85% average over the following courses, with no less than 60% in each course:

- a. English 40S
- b. two of: Mathematics 40S (Pre-Calculus recommended, or Applied), Biology 40S or Chemistry 40S

### 3.2.8 Engineering

General Entrance Requirements as listed above, plus a minimum 85% average over the following courses, with no less than 60% in each course:

- a. Pre-Calculus Mathematics 40S
- b. Chemistry 40S
- c. Physics 40S

### 3.2.9 General Studies (Extended Education)

Candidates should meet the General Entrance Requirements as listed above, plus the specific subject requirements and performance levels as Set A of University 1. High school graduates interested in working towards a University of Manitoba degree should apply to University 1 or one of the other direct entry programs.

### 3.2.10 Faculty of Human Ecology

General Entrance Requirements as listed above, plus a minimum 85% average over the following courses, with no less than 60% in each course:

- a. English 40S
- b. one of: Chemistry 40S, Biology 40S, or a Mathematics



40S

c. a third 40S course

### 3.2.11 Faculty of Kinesiology & Recreation Management

General Entrance Requirements as listed above, plus a minimum 85% average over the following courses, with no less than 60% in each course:

- English 40S
- Mathematics 40S
- one of: Biology 40S (recommended), Chemistry 40S, Physics 40S, or a Social Studies 40S (World Human Geography, Western Civilization History, or Social Studies: World Issues)

Please note that candidates interested in Athletic Therapy must apply as Advanced Entry applicants (see Section 4: Advanced Entry Options).

### 3.2.12 Marcel A. Desautels Faculty of Music

General Entrance Requirements as listed above, plus the same specific subject requirements and performance levels as University 1. An audition and a theory assessment are required ([www.umanitoba.ca/music](http://www.umanitoba.ca/music)). Grade 12 Music and a second language at the Grade 12 level are recommended.

### 3.2.13 Faculty of Science

General Entrance Requirements as listed above, plus a minimum 85% average over the following courses, with no less than 60% in each course:

- English 40S
- one of: Pre-Calculus Mathematics 40S (recommended) or Applied Mathematics 40S
- one of: Biology 40S, Chemistry 40S, Computer Science 40S, or Physics 40S

## SECTION 4: Advanced Entry Options

*Comprehensive information on the entrance requirements, application process, and deadlines for each of these options is found at [www.umanitoba.ca/admissions](http://www.umanitoba.ca/admissions).*

The following faculties and schools offer advanced entry options for applicants with a year (24 credit hours) or more of university-level studies, either in [University 1](#) (or another program) at the University of Manitoba, or at another recognized post-secondary institution.

- [Agricultural & Food Sciences \(degree programs\)](#)

[Architecture \(Environmental Design\)](#)

[Arts](#)

[Asper School of Business](#)

[Clayton H. Riddell Faculty of Environment, Earth, &](#)

[Resources](#)

[Dental Hygiene](#)

[Dentistry](#)

[Education](#)

[Engineering](#)

[Environmental Design \(Architecture\)](#)

[Fine Arts \(Art History\)](#)

[Human Ecology](#)

[Kinesiology & Recreation Management](#)

[Law](#)

[Medicine](#)

[Medical Rehabilitation \(Respiratory Therapy\)](#)

[Nursing](#)

[Pharmacy](#)

[Science](#)

[Social Work](#)

Students with a year or more of course work at the post-secondary level may also apply to any of the following direct entry programs:

- [Agricultural & Food Science \(diploma program\)](#)

[Fine Arts \(Studio programs\)](#)

[General Studies \(Extended Education\)](#)

[Marcel A. Desautels Faculty of Music](#)

(Students who have completed 24 credit hours or more of post-secondary institution courses are not normally eligible to apply for admission to [University 1](#).)

Students who have attended university or college, but who have completed less than 24 credit hours of course work at another institution, will normally apply for admission to [University 1](#) (see [Section 3.0 Direct Entry Options](#))

Students applying to an advanced entry option must meet two levels of requirements:

- The minimum performance standard of the University
- The minimum performance standards and specific requirements of the Faculty or School in which admission is sought.

### 4.1 Minimum Performance Standard of the University

The minimum performance requirement for entry to a post-University 1 level program at any faculty or school at the University of Manitoba is a cumulative grade point average (CGPA) of 2.0 (C). Students who do not meet this requirement may be considered for admission if they have achieved a minimum grade point average (GPA) of 2.0 (C) on all courses acceptable for credit in the faculty or school to which application is made. In this case, students must have at least 24 credit hours acceptable for credit. In addition to this university minimum performance requirement, students must meet any additional entrance requirements, performance levels, and selection criteria stipulated for the faculty or school of application.



Students who are currently on suspension at another post-secondary institution will not normally be considered for admission to the University of Manitoba.

*Students are advised that selection processes are competitive and in many cases applicants must present adjusted grade point averages greater than the minimum level stated. [See Section 4.2 below.](#)*

#### **4.2 Minimum Performance Standards and Specific Requirements of the Faculty or School,**

Each faculty and school has its own admission requirements and processes, including minimum performance standards and specific entrance requirements and restrictions, and this information is provided in the *Applicant Information Bulletin* posted on the University website ([www.umanitoba.ca/admissions](http://www.umanitoba.ca/admissions)). The introductory section of each faculty or school chapter provides a general overview of the admissions requirements, but for specific, comprehensive information on the entrance requirements and selection processes, students must review the Faculty's *Applicant Information Bulletin* posted on the website.

### **SECTION 5: Other Admission Categories**

#### **5.1 Readmission, Continuing and Returning Students,**

All students who were admitted and who did not follow through with registration must apply for re-admission ([www.umanitoba.ca/applynow](http://www.umanitoba.ca/applynow)).

Students who voluntarily withdraw from their first-year of studies must reapply for admission. The only exceptions are students in Agricultural and Food Science, Arts, General Studies, Human Ecology, Social Work, and University 1 who are permitted to reregister without re-applying for admission.

Former students who have attended other institutions since their last registration at the University of Manitoba must apply for re-admission, unless the other institution was attended on a letter of permission.

Students whose past registration was in the following faculties, but who have not been in attendance for one or more years, should seek formal permission to re-register from the office of the dean or director of the faculty or school concerned, to ensure that work previously completed complies with current program requirements: Agricultural and Food Sciences; Arts; General Studies (Extended Education); Engineering; Clayton H. Riddell Faculty of Environment, Earth, and Resources; Human Ecology; Science; Social Work; or University 1. Former students of the Faculty of Arts are required to re-apply for admission if they have been away from their studies for ten or more years.

All students who were admitted to the Asper School of Business, Dental Hygiene, Education, Environmental Design, School of Art, Nursing, Music, or Kinesiology & Recreation Management, where there is limited enrolment, and who have not been in attendance for one year or more,

must make formal application to re-register to the office of the dean or director before June 1. Their acceptance back into the program will be subject to quota restrictions and compliance with existing program requirements.

Students who wish to change to a different faculty or school, or who are no longer eligible to continue in one program of studies at the University of Manitoba, may apply for admission to another faculty or school by the application deadline date and must meet the entrance requirements of the faculty of choice.

Students wishing to return to their program of studies after serving a period of academic or disciplinary suspension must make a formal request for re-registration to the Dean's or Director's office of their faculty or school. Students currently on suspension from a faculty or school at the University of Manitoba will not normally be eligible for consideration for admission to another faculty or school.

Students who attend another post-secondary institution or another faculty or school at the University after being placed on suspension must submit an application through the Admissions Office to be considered for readmission to the faculty or school of suspension.

Graduates who wish to take further courses in their own faculty, but not towards a degree, must apply for readmission as a "special student."

#### **5.2 Special Students,**

Special students are those who wish to enrol in a degree credit course for professional or personal interest and who are not seeking to complete a degree. These students apply to General Studies (Extended Education) or to the faculty or school offering the course.

#### **5.3 Visiting Students,**

Visiting students are students who are registered at another institution who are taking one or more courses at the University of Manitoba on a Letter of Permission from their home university. These students generally apply for admission to General Studies (Extended Education).

#### **5.4 Auditing Students,**

Auditing students are those who wish to be admitted for the purpose of auditing a course(s) only (not for academic credit). No documentation other than the information requested on the application form is required for admission purposes. Auditing students are not entitled to examination or other evaluation privileges, and in no instance may credit standing be obtained for a course which has been audited. Once admitted, the written consent of the instructor of the course(s) which the student wishes to audit must be presented at the time of registration for approval by the faculty or school. (Students admitted in a category other than auditor may audit courses with the approval of the dean or director, provided written permission of the instructor is presented at registration.)



### 5.5 Students Transiting to Arts or Science from University 1,

University 1 students in good academic standing ([see the University 1 section of this Calendar](#)) may be admitted to either Arts or Science through a process called 'transiting', and are not required to complete the admission process through the regular application procedures. Students intending to transit to the Faculty of Arts or Science may do so prior to their next regular term of registration subject to the following conditions:

- Students in good academic standing who have completed at least 24 credit hours may choose to transit to the Faculty of Arts or Science.
- Students in good academic standing who have completed 30 credit hours or more in University 1 must choose to transit to Arts or Science, if not admitted to another faculty or school, prior to the next regular term of registration. Students will not normally transit for Summer Session.
- Students whose last assessment in University 1 was On Probation may be considered for entry to the Faculty of Arts or the Faculty of Science if a minimum GPA of 2.0 has been achieved on all courses acceptable for credit in the Faculty they intend to enter. In this case, students must have at least 24 credit hours acceptable for credit. Students requesting entry in this category must contact the Faculty of Arts or Science for further information.
- Students who are currently on academic suspension from University 1 will not be eligible for transit to Arts or Science until the period of suspension has been completed.

Upon transit to the Faculty of Arts or Science, a student's next assessment of academic performance will be according to the standards required in Arts and Science. See the chapters for the [Faculties of Arts](#) or [Science](#) in this *Calendar* for further details.

## SECTION 6: Admission with Advanced Standing

Students who have previously attended a recognized post-secondary institution, including universities, colleges, community and/or technical colleges, and Bible Colleges, who are selected for admission to either a direct entry or an advanced entry program option may qualify for advanced standing. Advanced standing will be granted in compliance with the residence requirements, provided the work completed is part of the requirements of the degree program in which the student wishes to enrol. Some faculties and schools may consider only courses completed within ten (or fewer) years. Credit will be granted only for courses taken at a recognized institution. Standing cannot be determined until official transcripts and complete course descriptions have been received. Since it takes considerable time to have courses evaluated for transfer credit, students are urged to submit their results and course descriptions as early as possible in order that the evaluation process can be completed in time for registration. Students who do not have

evaluations completed prior to registration should consult their faculty or school for guidance in selecting courses.

Transfer credit for each individual course will be evaluated by the appropriate University of Manitoba department and transfer credit will be granted subject to program applicability.

Further information on transfer of credit and residence requirement is found in the chapter, General Academic Regulations and Requirements.

Some faculties and schools may have limitations on possible credit taken beyond a specified period; this information is described in their chapters or in the *Applicant Information Bulletin*.

**6.1 Advanced Standing for High School Students,** Students who have completed courses in the *Advanced Placement* program (selected Advanced Placement College Board examinations with a minimum score of four in specific areas) or the *International Baccalaureate* program (selected Higher and Standard Level courses with minimum scores of 4 in specific subject areas), or who have completed university level courses while in high school (including Challenge for Credit), may apply for transfer of credit to the program they are entering. Students should consult the Admissions Office for information.

Students admitted on the basis of high school graduation may be denied transfer of credit for any university studies completed between the filing of the application and subsequent registration at the University of Manitoba.

**6.2 Students Applying from Bible Colleges,** Students who have attended a Bible college will be considered for admission/transfer credit, providing that:

- The Canadian Bible college is a member institution of the Association of Universities and Colleges of Canada (AUCC) or is affiliated with an AUCC member institution (other than as an approved teaching centre), or is accredited by the Association for Biblical Higher Education (ABHE).
- The U.S. Bible college holds regional accreditation in the U.S., or is accredited by ABHE.

Degrees from Bible Colleges will not qualify applicants for admission to second degree or after degree programs, with the exception of holders of approved degrees from Booth College and Providence College who are applying for admission to the After Degree Bachelor of Education program. These degrees may suffice for admission to the After Degree program; contact the Faculty for specific information.

**6.3 Graduates of Diploma Schools of Nursing (R.N.),** Graduates of diploma schools of nursing may be considered admissible as regular students to the University of Manitoba.



Admission to specific faculties and schools will be with the consent of the dean or director and will be conditional upon the presence of specific subject fields within the program completed. Applicants in this category may be granted advance standing not exceeding the residency policy of the faculty concerned (grades of "C+" or equivalent in individual courses have the potential for credit in a degree program).

#### 6.4 Graduates of Diploma Schools of Psychiatric Nursing (R.P.N.),

Diploma programs in Manitoba may receive credit transfer for professional work completed.

#### 6.5 Canadian Coast Guard College,

Graduates of the Canadian Coast Guard College diploma programs with a minimum 2.5 ("C+") average will be considered for admission as regular students to the University of Manitoba, and may be granted up to one year of advance standing, as appropriate to faculties and schools.

#### 6.6 Graduates of Extended Education,

Graduates of certificate programs offered under the auspices of the Extended Education Division of the University of Manitoba which require a minimum of 180 contact hours, may be eligible to receive credit towards an undergraduate degree providing they have been admitted to a faculty or school in which transfer of credit is appropriate. A minimum overall average of 2.5 or better must have been achieved to qualify for consideration. The maximum amount of credit which may be transferred will be determined by Extended Education in consultation with the relevant faculty or school.

## SECTION 7: English Language Proficiency

### 7.1 English Language Proficiency Requirement,

English is the language of instruction and communication at the University of Manitoba. Accordingly, an applicant whose primary language is not English, or whose previous education was in another language, must demonstrate a command of English sufficient to meet the demands of classroom instruction, written assignments, and participation in tutorials and discussions.

*Canadian Citizens, Permanent Residents and others whose primary language is English* are deemed to be proficient in English by virtue of having lived and been educated in a country where English is the primary language (country as determined by the Admissions Office).

*Canadian Citizens and Permanent Residents and International (study permit) applicants whose primary language is NOT English* must provide evidence of proficiency in English by meeting the University of Manitoba standards as outlined in the following section.

### 7.2 English Language Proficiency Options ,

Undergraduate Calendar

Any applicant who is asked to demonstrate proficiency in the English language may do so by meeting any one of the following options:\*

- Achieve a minimum total score of 80 with a recommended minimum of 19 in each component score on the internet-based Test of English as a Foreign Language (TOEFL).
- Achieve a minimum score of 550 with no less than 50 (unscaled) in each of the component scores on the paper-based TOEFL.
- Achieve a minimum total score of 213 with no less than 17 (unscaled) in each component score in the computer-based TOEFL.
- Achieve minimum scores of 4.5 in Reading, 4.5 in Listening and 4.0 in Writing on the Canadian Test of English for Scholars and Trainees (CanTEST).
- Achieve a minimum score of 6.5 based upon the academic module A, or module B, on the International English Language Testing System (IELTS).
- Achieve a minimum score of 80 on the Michigan English Language Assessment Battery (MELAB).
- Achieve a grade of C or higher on the University of Cambridge Certificate of Proficiency in English.
- Achieve a score of 60 or more in the Canadian Academic English Language Assessment (CAEL).
- Achieve a minimum score of 58 in the Pearson Test of English (Academic).
- Achieve a minimum of 65% in the direct-entry English program, also known as the Academic English Program for University and College Entrance (AEPUCE), as taught by the English Language Centre at the University of Manitoba.

\* Some Faculties may require a specific test or test scores higher than those indicated above.

### 7.3 English Language Proficiency Waiver,

An English language proficiency waiver may be granted to anyone who is a Permanent Resident, Naturalized Canadian, or who is in Canada on a study permit.

Students seeking this exemption must provide supporting documentation and have the information assessed as satisfactorily meeting one of the following:

- Ten consecutive years of residency in Canada, which may include years of study.
- Successful completion of a three-year secondary (high school) program in Canada, or three years of post-secondary education in Canada, or any combination of three years of successful secondary and post-secondary education in Canada.
- Graduation from a Manitoba high school with five credits at the Grade 12 level which include two credits of English at the 40S or U level with an average grade of 75 per cent.
- Achieve a grade of four or better on the International Baccalaureate Higher Level English course, or a grade of four or better on the

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Advanced Placement English Composition:  
Literature and Composition.

- Verify conditions equivalent to the above in a country where English is the primary language.

Student Advocacy, 519 University Centre, telephone (204) 474 7423.

If applicants wish to appeal the reconsidered decision of the selection committee, they should direct their request to the Office of the University Secretary for transmission to the Senate Admission Appeals Committee, within ten days following the mailing of the results of the selection committee's reconsideration. All appeals shall be filed on the approved form.

Information and appeal forms for the Senate Admission Appeals Committee are available from the Admissions Office or the Office of the University Secretary (312 Administration Building).

## SECTION 8: Application Procedure

### 8.1 Applications, Deadlines and Documents,

On-line applications and downloadable application material is provided on the university website ([www.umanitoba.ca](http://www.umanitoba.ca)) and at the Admissions Office, 424 University Centre; telephone (204) 474-8808. All applicants are advised to download the *Applicant Information Bulletin* for their chosen faculty/school for a careful review of the entrance requirements and selection process and then to apply on-line for admission. Paper application packages will be supplied to any applicant unable to access this electronically.

Students are encouraged to submit their applications as early as possible to provide enough time for documentation submission and application processing. Students cannot register until a favourable admission decision has been made. Generally faculties and schools do not consider nor issue acceptances to students awaiting supplemental or summer session results. In those faculties and schools which do, applications must be filed in time to meet the deadline date. An admission decision will only be made upon receipt of final examination results.

Application to live in a campus residence is made separately (see the Student Affairs chapter).

Students who have attended a university other than the University of Manitoba will be required to submit official transcripts of all previous work completed. Transcripts should be submitted at the time of application, or as soon as final results are available, but no later than the deadline date for submission of documents. University of Manitoba transcripts are not required of applicants.

Transfer student applicants who register for further university/college courses subsequent to their application to the University of Manitoba (unless on a Letter of Permission from the University of Manitoba) *must* submit an official transcript of final grades. Admission status will be reassessed, and unless prior permission has been obtained from the Admissions Office, transfer of credit may be denied.

### 8.2 Appeals of Admission Decisions ,

Individuals who wish to have their applications reconsidered should direct their request in writing within ten days of mailing of the notification of denial of admission to the chair of the faculty/school selection committee; or in the case of Agricultural and Food Sciences, Arts, Human Ecology, Engineering, Education, Fine Arts, Music, Science, and University 1 to the respective general office. Additional information on appeals is available from these general offices. Advice on appeals is available from the Office of

### 8.3 Application Fraud or Misconduct,

Application fraud or misconduct includes:

- Failure to declare attendance at another post-secondary institution;
- Presenting falsified academic documentation or causing or encouraging another person to falsify records through translation or data changes;
- Presenting falsified personal documentation, e.g. using a false name, date of birth, country of origin, etc.;
- Presenting falsified or fictitious reference documentation;
- Cheating on, or having another person write, a standardized entry exam such as, TOEFL, MCAT, LSAT, DAT or GMAT;
- Presenting another person's standardized test score as one's own to falsify a test result; and
- Failure to report suspensions from another post-secondary institution.

### 8.4 Declaration,

All persons seeking admission to the University of Manitoba must sign (or accept) the following declaration on the application for admission form: "I hereby certify that I have read and understood the instructions and information sheet accompanying any part of this application form and that all statements made in connection with this application are true and complete."

The commission of applicant fraud or misconduct may result in acceptance and registration being withdrawn and the applicant disqualified from consideration, not only in the year of application, but in subsequent sessions. If discovered in a subsequent session it may result in dismissal from the university.



## University 1

### University 1 Student Help Centre

**Program Director:** Dr. Elizabeth Worobec  
**Campus Address/General Office:** 205 Tier Building  
**Telephone:** (204) 474 6209  
**Fax:** (204) 474 7659  
**Email Address:**

[university\\_1@umanitoba.ca](mailto:university_1@umanitoba.ca)

**Website:**

[umanitoba.ca/U1](http://umanitoba.ca/U1)

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#### SECTION 1: University 1

##### 1.1 First Year Study in University 1,

University 1 is the first 30 credit hours of most University of Manitoba programs, and depending on choice of target faculty, may be completed through either full-time or part-time study. High school graduates, mature students, and transfer students with less than 24 credit hours of post-secondary education are normally admitted to University 1. A direct entry option exists for select faculties; please refer to the [Admissions Chapter](#) of this *Calendar* for details.

The courses taken in University 1 are introductory university level courses that are intended to qualify students to enter the target faculty of their choice. When students have completed 30 credit hours in University 1 and have a minimum cumulative Grade Point Average (GPA) of 2.0, they must transit to the Faculty of Arts or the Faculty of Science or apply to another faculty or school where they complete its program requirements in order to graduate.

As outlined in the following sections the main pillars of University 1 are academic advising, academic support and academic orientation. For a more detailed description of University 1 please see the University 1 website at [umanitoba.ca/u1](http://umanitoba.ca/u1).

##### 1.2 The University 1 Student Help Centre,

The University 1 Student Help Centre is home to registration assistants and professionally trained Academic Advisors. Should difficulties arise in any area that would affect academic success the staff members of the University 1 Student Help Centre are available to help.

Academic Advisors typically assist students with program planning, registration difficulties, personal issues or concerns, and connecting students to other campus resources. Newly admitted students should complete the Online Registration Tutorials ([see Section 4.1 in this chapter](#)) prior to consulting with a University 1 Academic Advisor.

Please refer to the University 1 website: at [umanitoba.ca/u1](http://umanitoba.ca/u1) for hours of operation and contact information.

##### 1.3 ARTS 1110: Introduction to University,

**ARTS 1110**, Introduction to University is a three credit hour course offered by University 1. It is designed to help students make the transition from high school, college or work-place to university, and is normally only available to students who have completed fewer than 12 credit hours of university level courses. ARTS 1110 may help students



adjust to university life more quickly, offering a unique combination of educational principles, practical skills, regular assignments, and the support of a group of fellow students. Features of ARTS 1110 include: strategies for academic success; introduction to libraries and research methods; exercises in critical thinking; and instruction and extensive practice in effective writing, from first draft to finished work. ARTS 1110 satisfies the university's written English requirement.

#### 1.4 Orientation ,

Making the transition from high school or another post-secondary institution can be overwhelming. Orientation provides students with the tools and information needed to start the year off strong and find success as a University of Manitoba student. All new students are strongly encouraged to attend the two-day Orientation at the beginning of the Fall Term.

During Orientation, homeroom groups of approximately 30 students, led by upper year U of M students, will attend study skills sessions, learn tips for academic success, become familiar with campus and the resources available to students, and find out how to get involved in the campus community. Students will also enjoy free entertainment, food, prizes and much more.

Information about Orientation will be sent to new students in August. (Students beginning their studies in the Winter Term will have the opportunity to attend Orientation in January. Information will be mailed accordingly.) For more information, please visit [www.umanitoba.ca/orientation](http://www.umanitoba.ca/orientation).

## SECTION 2: Admission Requirements

Please see the [Admissions chapter](#) of this *Calendar* for a full description of the specific admission requirements to University 1.

#### 2.1 Limited Admission,

Canadian high school graduates who do not meet the specific academic requirements for admission to University 1 may be admitted under a special Limited Admission category. Students in this category will have their registration restricted ([see section 3.1](#)) and will be provided with additional academic supports and services. For a full description of the Limited Admission program and requirements, please refer to [umanitoba.ca/student/u1/advising/limited\\_admission.htm](http://umanitoba.ca/student/u1/advising/limited_admission.htm).

## SECTION 3: University 1 Academic Regulations

Academic regulations which apply to all students are described in the chapters in this *Calendar* titled '[General Academic Regulations](#)', and '[University Policies](#)'. In addition, University 1 and the faculties and schools offering University

1 courses have regulations and requirements that apply specifically to its students. The University 1 Academic Regulations are described below. Please see the specific Faculty or School chapter(s) for the academic regulations that may apply to courses in which you are registered.

#### 3.1 Maximum Course Load,

University 1 students are normally restricted to a maximum of 30 credit hours during the Fall/Winter terms, with a maximum of five courses in each term. Students admitted under the Limited Admission category will be restricted to a maximum of 24 credit hours during the Fall/Winter terms, with a maximum of four courses in each term. In each case, a credit hour overload may be considered for Winter Term based on Fall Term performance. Contact the [University 1 Student Help Centre](#) to discuss course overload requests.

#### 3.2 Repeating Courses,

University 1 students may repeat a course they have previously taken, but they are **not required** to do so because of a low grade or a VW, unless it is a course required for admission or required once in their target faculty. University 1 students who wish to repeat a course in which they have a final grade must consult with a University 1 Academic Advisor prior to registration. Students may be eligible for a laboratory exemption in classes they are repeating with a laboratory component (see [Section 3.3](#) in this chapter).

For courses that have been repeated (i.e. 2nd attempt) only the last grade achieved will be counted towards the students' cumulative Grade Point Average. However, the official transcript will reflect the grades of all courses attempted. In most cases, students will only be given one opportunity to repeat a course in which they have received a final grade. This includes taking a course considered to be equivalent to the course originally attempted.

Students must refer to their target faculty or school's *Applicant Information Bulletin* to determine how repeating a course may affect admission eligibility.

#### 3.3 Laboratory Exemptions,

University 1 students who are repeating a course with a laboratory component may qualify for a laboratory exemption. Laboratory exemptions are only granted if the lab portion of the course was passed. Only certain courses (usually courses in the Faculty of Science) offer laboratory exemptions. Students should see the general office of the department offering the course to determine if they are eligible for a laboratory exemption. Students who are eligible for a laboratory exemption should bring written permission from the department offering the course to the [University 1 Student Help Centre](#) prior to registration.

#### 3.4 Academic Performance,

Grades obtained in University 1 become a part of the student's permanent record and will appear on the student's official transcript. See [Section 4 of the General Academic Regulations](#) chapter of this *Calendar* for a description of how



Grade Point Averages (GPAs) are calculated. Grades earned while in University 1 will determine admission to most target faculties or schools.

### Performance Level

University 1 students who have completed 12 credit hours or more will have their academic performance assessed informally as part of an Early Warning Program. Students with a cumulative GPA of less than 2.00 will be identified as part of the Early Warning Program which is designed to assist students at the earliest sign of academic difficulty by providing academic advising, support services, and strategic referrals with the goal of returning the student to good standing.

Formal academic assessments are performed following each term for all University 1 students who have completed 24 credit hours or more. As a result of this assessment students will be determined to be minimum met, on probation, or on academic suspension.

### Minimum Met

University 1 students who have completed 24 credit hours or more must achieve a cumulative GPA of 2.00 or greater at each point of assessment in order to have met the minimum requirements of University 1. Students considered to be minimum met may be eligible to enter their target faculty and are encouraged to contact their target faculty or a University 1 Academic Advisor for admission information.

### Probation

Students who do not achieve a cumulative GPA of 2.00 after attempting a minimum of 24 credit hours will be placed on probation. The notation "On Probation" will be recorded on the student's transcript. Once on probation, a student will be allowed to register for another term. At each point of assessment (at the end of each term), students on probation must achieve a term GPA of 2.00 to be able to continue registering on probation. To clear probationary status the student's cumulative GPA must be 2.00 or higher. Once a student's cumulative GPA reaches 2.00 or higher they will have returned to good standing and will be able to register without restrictions.

While on probation, support services and referrals may be suggested in order to improve academic performance. Some restrictions on course load may apply. If the student does not achieve a term GPA of 2.00 in each term that they register while on probation, he/she will be placed on academic suspension for one calendar year (see below).

Please note students who are registered in spanned courses will be assessed at the end of each term in which they are registered. It is possible for a student to be placed on probation prior to completing a spanned course; however an assessment of academic suspension will not occur while a student is registered in a spanned course. Students on probation who are registered in spanned courses will continue on probation until the spanned course is complete,

and may be placed on academic suspension at the end of the term in which the spanned course is complete if their term GPA is below 2.00.

### Academic Suspension

A student will be placed on academic suspension after failing to achieve a minimum term GPA of 2.00 while on probation. A student placed on academic suspension in University 1 is normally not permitted to register in any other faculty or school at the University of Manitoba or to attend any other post-secondary institution for a period of one calendar year. All students placed on academic suspension are strongly encouraged to meet with a University 1 Academic Advisor to discuss possible alternatives to suspension. Students planning to return to studies once the term of the suspension has been served must meet with a University 1 Academic Advisor prior to registration for courses.

### 3.5 University 1 Honour List,

Students who achieve a term GPA of 3.50 or higher on a minimum of 12 credit hours will be placed on the University 1 Honour List. The University 1 Honour List will be calculated after each term (i.e. Fall, Winter, Summer).

The University 1 Honour List designation will appear on the student's transcript.

## SECTION 4: University 1 Program Requirements

### 4.1 Course Selection and Registration,

Course selection information for University 1 students can be found in the [Start Book](#), which describes in detail the courses and course selection options available to University 1 students. The list of courses available to University 1 students is also available in [Section 5](#) of this chapter. With special permission, students may register for courses not on this list.

New University 1 students are **strongly encouraged** to complete the series of [Online Registration Tutorials](#) before registering for courses. The tutorials will teach students to use the Aurora Student registration system. Information about course selection, determining a course load, and building a timetable can be found on the [University 1 website](#). Other registration related concerns, such as paying fees and obtaining a photo identification card can be found on the [Registrar's Office website](#).

The [Start Book](#) and details about the Online Registration Tutorials will be distributed beginning in May and throughout the summer for students newly admitted to University 1 for the Fall Term; in the Fall for students admitted for the Winter Term; and in the Spring for students admitted for the Summer Term. Detailed registration information, including an online version of the Start Book, is also available at [umanitoba.ca/u1](http://umanitoba.ca/u1).



#### 4.2 University 1 Curriculum,

University 1 is normally the first 24-30 credit hours of a student's degree program. The University 1 curriculum includes a breadth requirement to ensure that students are exposed to a representative sample of courses. To that end University 1 students are required to take 6 credit hours of courses from the Faculty of Arts, 6 credit hours of courses from the Faculty of Science, and 6 credit hours of courses from the Faculty of Arts or the Faculty of Science or the Clayton H. Riddell Faculty of Environment, Earth, and Resources. The remaining 12 credit hours of courses are to be chosen from the Recommended List of First Year Courses in the [Start Book](#) (also found in [Section 5](#) of this chapter).

The University 1 curriculum will normally be fulfilled through the completion of the admission requirements to faculties and schools as outlined in this *Calendar* and in the [Start Book](#). Students who are admitted to faculties and schools after University 1 and who have not completed the University 1 curriculum will complete the remaining requirements as part of their degree program. Additionally, students may be eligible to enter a faculty or school program once they have completed 24 credit hours, but must complete remaining University 1 coursework in their intended degree program (see Section 4.3 in this chapter).

#### 4.3 Transfer to Faculties and Schools Following University 1,

Target faculties and schools that students may enter after University 1 have established minimum admission requirements. It is strongly advised that students pay attention to these requirements when choosing their courses in University 1. Target faculties and schools that admit students directly from University 1 require the completion of either 24 or 30 credit hours, depending on the program. There are often alternative courses that will fulfill admission requirements and, with careful planning, the University 1 course selection can qualify students for admission to more

### SECTION 5: Recommended List of First Year Courses

Refer to [Section 4](#) in this chapter for information about choosing courses in University 1. To find a description of the courses on this list, go to the chapter in this *Calendar* for the faculty or school that is offering the course. The chapters are in alphabetical order, and departments are listed alphabetically within each faculty or school chapter. Courses are listed in the department sections and sorted in numerical order.

Faculty of Agricultural and Food Sciences,

#### Agribusiness

ABIZ 1000 Introduction to Agribusiness Management  
ABIZ 1010 Economics of World Food Issues and Policies

#### Entomology

ENTM 1000 World of Bugs

#### Food Science

FOOD 1000 Food Safety Today and Tomorrow

Credit Hours

3

3

3

3

than one program. Many target faculties and schools have also established a Focused Approach for choosing courses in University 1 that will allow students to complete their degree in the shortest possible time. Information about course requirements for each target faculty or school can be found in the Admission section in the chapter pertaining to each faculty or school in this *Calendar*, the [Start Book](#), and in the Applicant Information Bulletin available on the [Admissions website](#), or from the Enrolment Services Office, 424 University Centre.

Students who have completed 30 credit hours or more with a cumulative Grade Point Average (GPA) of 2.0 must exit University 1 before registering in the next Fall/Winter Terms. Students with 30 credit hours or more who have not met specific academic standards are normally required to remain in University 1 until those standards are met. See [Section 3.4](#) of this chapter for an explanation of University 1's academic standards.

Students who have completed 24 credit hours or more with a minimum cumulative GPA of 2.0 may be eligible to apply for admission to another faculty or school. Alternatively, students who have completed 24 to 29 credit hours with a cumulative GPA of 2.0 or higher may elect to remain in University 1 and register for a full course load.

Students who have completed 24 credit hours or more with a cumulative GPA of 1.99 or less may not be eligible for admission to a target faculty or school and would remain in University 1. Students should refer to University 1's academic standards as outlined in [Section 3.4](#) of this chapter.

Students with less than 24 credit hours remain in University 1 for their next registration and may register for a full course load.

Note that not all courses listed in this section are offered every year. To determine which courses are offered in the current academic year refer to the [class schedule](#) and the University 1 [Start Book](#). Students may be permitted to take courses not on this list with permission of the teaching faculty or school and University 1.

For a list of courses available at [Université de Saint-Boniface](#) see a University 1 Academic Advisor or refer to the [Class Schedule](#)



**Plant Science**

PLNT 1000 Urban Agriculture 3

**General Faculty**

AGRI 1500 Natural Resources and Primary Agricultural Production 3

AGRI 1510 Production, Distribution and Utilization of Agricultural Products 3

In addition to the courses listed above, students who are registering in University 1 for a second year to complete courses required for entry to Agricultural and Food Sciences may request permission to register in any advanced level Agricultural and Food Sciences courses for which they have the prerequisites, subject to space limitations. Students must first consult a University 1 Academic Advisor.

Faculty of Architecture,

EVDS 1600 Introduction to Environmental Design 3

EVDS 1602 Visual Literacy 3

EVDS 1660 History of Culture, Ideas and Environment 1 3

EVDS 1670 History of Culture, Ideas and Environment 2 3

Faculty of Arts

In addition to the courses listed below, University 1 students may take any 2000, 3000 and 4000 level Arts courses for which they have the prerequisite, subject to space limitations.

**Anthropology**

ANTH 1210 Human Origins and Antiquity 3

ANTH 1220 Cultural Anthropology 3

ANTH 1520 Critical Cultural Anthropology 3

**Asian Studies**

ASIA 1420 Asian Civilizations to 1500 3

ASIA 1430 Asian Civilizations from 1500 3

ASIA 1750 Introduction to Korean 6

ASIA 1760 Introduction to Chinese (Mandarin) 6

ASIA 1770 Introduction to Japanese 6

ASIA 1780 Basic Sanskrit 6

ASIA 1790 Basic Hindi-Urdu 6

ASIA 2360 Mandarin Comprehension 6

ASIA 2760 Intermediate Chinese (Mandarin) 6

ASIA 2770 Intermediate Japanese 6

**Canadian Studies**

CDN 1130 Introduction to Canadian Studies 6

**Catholic Studies**

CATH 1190 Introduction to Catholic Studies 3

**Classics**

**Classical Studies**

CLAS 1270 Introduction to Ancient Greek Culture 3

CLAS 1280 Introduction to Ancient Roman Culture 3

**Greek**

GRK 1010 Introduction to the Reading of Ancient Greek 1 3

GRK 1020 Introduction to the Reading of Ancient Greek 2 3

GRK 1030 New Testament Greek 6

GRK 1060 Introductory Modern Greek 1 3

GRK 1070 Introductory Modern Greek 2 3

GRK 1310 Intermediate Readings in Ancient Greek 3

GRK 1330 The Acts of the Apostles 3

**Latin**

LATN 1080 Introduction to the Reading of Latin 1 3

LATN 1090 Introduction to the Reading of Latin 2 3

LATN 1320 Intermediate Readings in Latin 3

**Economics**

ECON 1010 Introduction to Microeconomic Principles 3

ECON 1020 Introduction to Macroeconomic Principles 3

ECON 1210 Introduction to Canadian Economic Issues and Policies 3

ECON 1220 Introduction to Global Environmental Economic Issues and Policies 3

**English, Film, and Theatre**

ENGL 0930 English Composition (**Note:** This course is not acceptable for credit in the Faculties of Engineering, Nursing and Pharmacy, nor can it be used to meet the Humanities requirement). 3

ENGL 0940 Writing About Literature (**Note:** This course is not acceptable for credit in the Faculties of 3



	Engineering, Nursing and Pharmacy, nor can it be used to meet the Humanities requirement).	
ENGL 1200	Representative Literary Works	6
ENGL 1300	Literature since 1900	6
ENGL 1310	Literary Topics 1	3
ENGL 1340	Introduction to Literary Analysis	3
	Film	
FILM 1290	The Art of the Film 1	3
FILM 1310	Film History	3
	Theatre	
THTR 1220	Introduction to Theatre	6

### French, Spanish and Italian

#### French

FREN 1150	Introductory French	6
FREN 1190	Francais	6
FREN 1200	French 1	6
FREN 1252	Francais Oral 1	3

#### Spanish

SPAN 1180	Introductory Spanish	6
SPAN 1190	Introductory Spanish 2	3
SPAN 1262	Intermediate Spanish Language and Conversation 1	3
SPAN 1272	Intermediate Spanish Language and Conversation 2	3
SPAN 1280	Spanish for Native Speakers	3
SPAN 1290	Accelerated Intermediate Spanish	6

#### Italian

ITLN 1080	Introductory Italian	6
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#### Portuguese

PORT 1170	Introductory Portuguese	6
PORT 1282	Intermediate Portuguese Grammar & Conversation	3

### German and Slavic Studies

#### German

GRMN 1120	Beginning German	6
GRMN 1300	Masterpieces of German Literature in English Translation	3
GRMN 1310	Love in German Culture in English Translation	3
GRMN 2100	Intermediate German	6
GRMN 2120	Introduction to German Culture 1	3
GRMN 2130	Introduction to German Culture 2	3
GRMN 2140	Exploring German Literature	3

#### Hungarian

HUNG 1000	Introduction to Hungarian 1	3
HUNG 1002	Introduction to Hungarian 2	3

#### Russian

RUSN 1300	Introductory Russian	6
RUSN 1330	Introductory Russian 2	3
RUSN 1400	Masterpieces of Russian Literature in English Translation	3
RUSN 2280	Russian Culture 1	3
RUSN 2290	Russian Culture 2	3
RUSN 2810	Intermediate Russian	6
RUSN 2820	Intermediate Russian 2	3

#### Ukrainian

UKRN 1230	Language Seminar in Ukraine 1	3
UKRN 1310	Introductory Ukrainian	6
UKRN 1320	Introductory Ukrainian 2	3
UKRN 2720	Intermediate Ukrainian	6
UKRN 2730	Intermediate Ukrainian 2	3
UKRN 2770	Ukrainian Culture 1	3
UKRN 2780	Ukrainian Culture 2	3

#### Polish

POL 1890	Introductory Polish	6
POL 1900	Love, Heroes & Patriotism in Contemporary Poland	3
POL 2530	Polish Civilization	6
POL 2890	Intermediate Polish	6

### History



HIST 1200	An Introduction to the History of Western Civilization	6
HIST 1260	New Directions in History: Inquiries into the Cultural Basis of the Modern World	3
HIST 1270	New Directions in History: Inquiries into the Power Relations of the Modern World	3
HIST 1350	An Introduction to the History of Western Civilization to 1500	3
HIST 1360	An Introduction to the History of Western Civilization from 1500	3
HIST 1370	An Introduction to Modern World History: 1500-1800	3
HIST 1380	An Introduction to Modern World History: 1800-Present	3
HIST 1390	History of Colonial Canada: 1500-1885	3
HIST 1400	History of the Canadian Nation since 1867	3
HIST 1420	Asian Civilizations to 1500	3
HIST 1430	Asian Civilizations from 1500	3
HIST 1440	History of Canada	6
HIST 1500	An Introduction to Modern World History: 1500 - Present	6
HIST 2050	South Asia since 1947	3
HIST 2080	The Byzantine Empire and the Slavic World	3
HIST 2130	Emergence of Modern South Asia: 1757-1947	3
HIST 2140	Colonial Latin America	3
HIST 2150	Independent Latin America	3
HIST 2180	The History of Catholicism to 1540	3
HIST 2210	History of Britain, 1485 to the Present	6
HIST 2220	The Shaping of Modern Ireland, 1500 to the Present	6
HIST 2230	History of the United States from 1607	6
HIST 2240	History of Antisemitism and the Holocaust	6
HIST 2250	Social History of the Jews: Antiquity to Present	6
HIST 2280	Aboriginal History of Canada	6
HIST 2282	Inventing Canada	3
HIST 2284	Democracy and Dissent: Contesting Canada	3
HIST 2286	Modern Canada	3
HIST 2350	Europe 1789-1870	3
HIST 2360	Europe 1870-Present	3
HIST 2370	History of Europe since the French Revolution	6
HIST 2380	The Twentieth-Century World	6
HIST 2400	History of Human Rights and Social Justice in the Modern World	3
HIST 2410	History of India	6
HIST 2420	The Medieval World	6
HIST 2490	History of Russia	6
HIST 2500	History of Africa	6
HIST 2520	A History of Germany since the Reformation	6
HIST 2570	Nationalism in Modern Times	3
HIST 2600	Introduction to the Ukraine	3
HIST 2610	Making of Modern Ukraine	3
HIST 2650	Modern China and Japan	6
HIST 2654	History of the People's Republic of China, 1949 – Present	3
HIST 2660	History of the Soviet Union	3
HIST 2670	History of Capitalism	3
HIST 2680	A History of Socialism from the French Revolution to the Present	3
HIST 2710	Women in History	6
HIST 2720	The World Since 1945	6
HIST 2750	History of the United States from 1607 to 1877	3
HIST 2760	History of the United States from 1877	3
HIST 2820	An Introduction to Historical Method	6
HIST 2840	A History of Russia to 1917	3
HIST 2900	Topics in Social History	6
HIST 2930	The History of the British Isles, 412-1485	6
HIST 2970	Modern Canada: 1921 to the Present	6
HIST 2990	The History of Catholicism since 1540	3
<b>Icelandic</b>		
ICEL 1200	Introduction to Icelandic	6
ICEL 1210	Conversational Icelandic	3
ICEL 1300	Introduction to Swedish	3
ICEL 1400	Introduction to Contemporary Culture in Iceland	3
ICEL 1410	Introduction to Culture in Medieval Iceland	3
<b>Interdisciplinary</b>		
ARTS 1110	Introduction to University ( <b>Note:</b> This course is not acceptable for credit in the Faculty of Engineering, nor does it satisfy a Humanities or Social Sciences requirement.)	3
ARTS 1160	Leadership: An Interdisciplinary Approach (This course will satisfy the Faculty of Arts' Social	3



	Sciences requirement.)	
<b>Labour Studies</b>		
LABR 1260	Working for a Living	3
LABR 1290	Introduction to the Canadian Labour Movement	3
<b>Linguistics</b>		
LING 1200	Introduction to Linguistics	6
LING 1340	Semantics	3
LING 1360	Languages of Canada	3
LING 1380	General Phonetics	3
LING 1420	Language and Gender	3
LING 1440	Rules of English Grammar	3
<b>Judaic Studies</b>		
<b>Arabic</b>		
ARA 1000	Introductory Arabic	6
<b>Hebrew</b>		
HEB 1250	Hebrew 1	6
HEB 1260	Hebrew 2	6
<b>Yiddish</b>		
YDSH 1220	Yiddish	6
<b>Native Studies</b>		
NATV 1000	Orientation Course: The Colonizers and the Colonized	3
NATV 1200	The Native Peoples of Canada	6
NATV 1220	The Native Peoples of Canada, Part 1	3
NATV 1240	The Native Peoples of Canada, Part 2	3
<b>Native Languages</b>		
NATV 1250	Introductory Cree 1	3
NATV 1260	Introductory Cree 2	3
NATV 1270	Introductory Ojibway 1	3
NATV 1280	Introductory Ojibway 2	3
NATV 1290	Introductory Inuktitut	3
<b>Philosophy</b>		
PHIL 1200	Introduction to Philosophy	6
PHIL 1290	Critical Thinking	3
PHIL 1320	Introductory Logic	6
PHIL 1510	Historical Introduction to Philosophy	6
<b>Political Studies</b>		
POLS 1000	Democracy and Development	3
POLS 1010	Political Ideas and Ideologies	3
POLS 1040	Global Political Issues	3
POLS 1070	Law, Politics, and Power in Canada	3
POLS 1500	Introduction to Politics	6
<b>Psychology</b>		
PSYC 1200	Introduction to Psychology	6
<b>Religion</b>		
RLGN 1120	Biblical Hebrew	6
RLGN 1320	Introduction to World Religions	6
RLGN 1350	The History of Eastern Christianity	6
RLGN 1390	Readings in Biblical Hebrew 1	3
RLGN 1400	Readings in Biblical Hebrew 2	3
RLGN 1410	Death and Concepts of the Future	3
RLGN 1420	Ethics in World Religions	3
RLGN 1424	Religion and Sexuality	3
RLGN 1430	Food: Religious Concepts and Practices	3
RLGN 1440	Evil in World Religions	3
RLGN 1450	Religion and The Media	3
<b>Sociology</b>		
SOC 1200	Introduction to Sociology	6
<b>Women's and Gender Studies Program</b>		
WOMN 1500	Introduction to Women's and Gender Studies in the Humanities	3
WOMN 1600	Introduction to Women's and Gender Studies in the Social Sciences	3
WOMN 2560	Women, Science and Technology	3

Asper School of Business,  
**Business Administration**



GMGT 1010	Business and Society	3
GMGT 2030	Administrative Theory	3
GMGT 2060	Management and Organizational Theory	3
GMGT 2070	Introduction to Organizational Behaviour	3
<b>Entrepreneurship</b>		
ENTR 2010	Managing the Smaller Business	3
ENTR 2020	Starting a New Business	3
<b>Marketing</b>		
MKT 2210	Fundamentals of Marketing	3

In addition to the courses listed above students may register in any advanced level Business course for which they have the prerequisites, subject to space limitations.

Faculty of Engineering,

ENG 1430	Design in Engineering	3
ENG 1440	Introduction to Statics	3
ENG 1450	Introduction to Electrical and Computer Engineering	3
ENG 1460	Introduction to Thermal Sciences	3
ENG 1900	Occupational Health and Safety Awareness	3

In addition to the courses listed above, students who are registering in University 1 for a second year to complete courses required for entry to Engineering may request permission to register in any advanced level Engineering courses for which they have the prerequisites, subject to space limitations. Students must first consult the Faculty of Engineering and a University 1 Academic Advisor.

Clayton H. Riddell Faculty of Environment, Earth, and Resources,

In addition to the courses listed below, University 1 students may take any 2000, 3000 and 4000 level Clayton H. Riddell Faculty of Environment, Earth, and Resources courses for which they have the prerequisite, subject to space limitations.

**Environmental Science**

ENVR 1000	Environmental Science 1: Concepts	3
ENVR 2000	Environmental Science 2: Issues	3

**General Faculty**

EER 1000	Earth: A User's Guide	3
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**Geography**

GEOG 1280	Introduction to Human Geography	3
GEOG 1290	Introduction to Physical Geography	3

**Geological Sciences**

GEOL 1340	The Dynamic Earth	3
GEOL 1400	Time-Trekker's Travelog: Our Evolving Earth	3
GEOL 1410	Natural Disasters and Global Change	3
GEOL 1420	Exploring the Planets	3

Faculty of Human Ecology,

**Family Social Sciences**

FMLY 1010	Human Development in the Family	3
FMLY 1012	Introduction to Social Development	
FMLY 1020	Family Issues Across the Lifespan	3
FMLY 1420	Family Management Principles	3

**Human Nutritional Sciences**

HNSC 1200	Food: Facts and Fallacies	3
HNSC 1210	Nutrition for Health and Changing Lifestyles	3

**Textile Sciences**

TXSC 1600	Textiles for Living	3
TXSC 1610	Textiles, Product, and Consumers	3

In addition to the courses listed above, students who are registering in University 1 for a second year to complete courses required for entry to Human Ecology may request permission to register in any advanced level Human Ecology courses for which they have the prerequisites, subject to space limitations. Students must first consult the Faculty of Human Ecology and a University 1 Academic Advisor.

Faculty of Kinesiology and Recreation Management,

PERS 1200	Physical Activity, Health and Wellness	3
PERS 1300	Introduction to Leisure Travel	3
PERS 1400	Concepts of Recreation and Leisure	3
PERS 1500	Foundations of Physical Education and Kinesiology	3



Marcel A. Desautels Faculty of Music,	
MUSC 1050 The Well-Tempered Concert-Goer	3
MUSC 1070* Introduction to the History of Music	3
MUSC 1080* History of Music 2	3
MUSC 1110* Music Theory 1	3
MUSC 1120* Music Theory 2	3
MUSC 1280* Musical Style and Structure 1	3
MUSC 1290* Musical Style and Structure 2	3
MUSC 1930 Rudiments of Music	3
* Contact the Marcel A. Desautels Faculty of Music for permission to register.	

Faculty of Nursing,	
NURS 1260 Human Growth and Development	3
NURS 1280 Introduction to Nursing	3
Students in University 1 will not normally be permitted to take advanced level Nursing courses.	

Faculty of Science,  
In addition to the courses listed below, University 1 students may take any 2000, 3000 and 4000 level Science courses for which they have the prerequisite, subject to space limitations.

**Biological Sciences**

BIOL 1000	Biology: Foundations of Life	3
BIOL 1010	Biology: Biological Diversity and Interactions	3
BIOL 1110	Health and the Health Professions ( <b>Note:</b> This course will not be acceptable as part of the 6 credit hours of Faculty of Science electives for admission to the Faculty of Nursing.)	3
BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interaction	3
BIOL 1300	Economic Plants	3
BIOL 1340	The State of the Earth's Environment: Contemporary Issues	3
BIOL 1410	Anatomy of the Human Body	3
BIOL 1412	Physiology of the Human Body	3

**Chemistry**

CHEM 0900	Preparatory Chemistry	0
CHEM 1000	Understanding the World through Chemistry	3
CHEM 1030	Carbon Chemistry in Nature and Society	3
CHEM 1300	University 1 Chemistry: Structure and Modelling in Chemistry	3
CHEM 1310	University 1 Chemistry: An Introduction to Physical Chemistry	3
CHEM 1320	University 1 Chemistry: An Introduction to Organic Chemistry	3

**Computer Science**

COMP 1010	Introductory Computer Science 1	3
COMP 1012	Computer Programming for Scientists and Engineers	3
COMP 1020	Introductory Computer Science 2	3
COMP 1260	Introductory Computer Usage 1	3
COMP 1270	Introductory Computer Usage 2	3

**Mathematical Sciences**

MATH 0500	Preparing for University Mathematics	0
MATH 1010	Applied Finite Mathematics	3
MATH 1020	Mathematics in Art	3
MATH 1190	Topics in Mathematics	6
MATH 1200	Elements of Discrete Mathematics	3
MATH 1210	Techniques of Classical and Linear Algebra	3
MATH 1300	Vector Geometry and Linear Algebra	3
MATH 1310	Matrices for Management and Social Sciences	3
MATH 1500	Introduction to Calculus	3
MATH 1510	Applied Calculus 1	3
MATH 1520	Introductory Calculus for Management and Social Sciences ( <b>Note:</b> This course is not acceptable for credit in the Faculty of Engineering.)	3
MATH 1690	Calculus	6
MATH 1700	Calculus 2	3
MATH 1710	Applied Calculus 2	3

**Microbiology**

MBIO 1010	Microbiology 1	3
MBIO 1220	Essentials of Microbiology	3

**Physics and Astronomy**

Astronomy



PHYS 1810	General Astronomy 1: Lights, Stars and Planets	3
PHYS 1820	General Astronomy 2: Exotic Stars, Galaxies and Cosmology	3
PHYS 1830	Perspective on the Universe	3
	Physics	
PHYS 0900	Preparing for University Physics	0
PHYS 1020	General Physics 1	3
PHYS 1030	General Physics 2	3
PHYS 1050	Physics 1: Mechanics	3
PHYS 1070	Physics 2: Waves and Modern Physics	3
PHYS 1300	Energy and the Environment	6
	<b>Statistics</b>	
STAT 1000	Basic Statistical Analysis 1	3
STAT 2000	Basic Statistical Analysis 2	3

Faculty of Social Work,

**Faculty of Social Work**

SWRK 1310	Introduction to Social Welfare Policy	3
SWRK 2080	Interpersonal Communication Skills	3

**School of Art**

FA 1020	Mathematics in Art	3
FAAH 1030	Introduction to Art 1A	3
FAAH 1040	Introduction to Art 2A	3
STDO 1210	Drawing: Studio 1	3
STDO 1240	Figure Study 1	3
STDO 1250	Drawing: Studio 2	3
STDO 1410	Visual Language	3
STDO 1510	Art Now	3
STDO 1450	Open Studio 1	3
STDO 1470	Materials Studio	3

**Interfaculty Option in Aging**

An interfaculty [Option in Aging](#) is offered by the faculties of Arts, Human Ecology, Nursing, Kinesiology and Recreation

Management, and Social Work. Courses required for the Option in Aging are offered on a rotating basis by each of the participating faculties. Please see an Academic Advisor in University 1 for more information on the Option in Aging



## Faculty of Agricultural and Food Sciences/ School of Agriculture

**Dean:** Michael Trevan

**Associate Dean(s):** Brian Amiro, Martin Scanlon

**Program Director:** School of Agriculture: Michele Rogalsky

**Campus Address/General Office:** 256 Agriculture Building

**Telephone:** (204) 474-6026

**Email Address:** [agfoodsci@umanitoba.ca](mailto:agfoodsci@umanitoba.ca)

**Website:** [umanitoba.ca/afs/](http://umanitoba.ca/afs/)

**Student Services Office:** 160 Agriculture Building

**Telephone:** (204) 474-9295

### Academic Staff:

Please refer to the Faculty of Agricultural and Food Sciences website at [umanitoba.ca/afs](http://umanitoba.ca/afs)

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### SECTION 3: Faculty Academic Regulations

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Degree/Diploma Programs Offered,

Degree/Diploma	Years to Completion	Total Credit Hours
Bachelor of Science in Agriculture (Agronomy, Animal Systems or Plant Biotechnology Major)	4	120
Bachelor of Science in Agribusiness	4	120
Bachelor of Science in Agroecology	4	120
Bachelor of Science in Food Science (Science or Business Option)	4	120
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### SECTION 5: Course Descriptions

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Livestock Management or General Agriculture Option)

\*Two full years of university training are required for admission to the Western College of Veterinary Medicine (Saskatoon) comprised of 30 hours from University 1 and 30 hours in the Faculty of Agricultural and Food Sciences.

### Faculty Overview

The Faculty of Agricultural and Food Sciences has earned a reputation for its high-calibre teaching programs and its friendly helpful staff. Students benefit not only from the expertise of staff in the Faculty, but also from the close proximity of other faculties on campus, federal research facilities, and a vibrant Winnipeg-based agricultural community.

Information on the Faculty's History, Vision and Mission Statements, Research, Programs, Centres, and Departments can be found on our website at: [umanitoba.ca/afs](http://umanitoba.ca/afs).

### Degree Programs

The B.Sc. degree programs in Agricultural and Food Sciences provide an applied science background for graduates to enter a range of professions. Students can choose degree specializations in Agribusiness, Agriculture (Agronomy, Animal Systems, Plant Biotechnology), Agroecology, or Food Science. The focus is on the agricultural industry with professions concerned with the production, processing and marketing of food and bioresources. However, the B.Sc. degree also provides students with the education to tackle a range of career opportunities beyond agriculture. Professional agriculturists hold positions in extension, resource management and conservation, teaching, research and business. Professional food science graduates hold similar positions related to food manufacturing and processing. Graduates from the faculty make important contributions to the economy and health of Canada and the world. The faculty also offers a two-year pre-veterinary program for students who plan to take the degree Doctor of Veterinary Medicine.

The two-year Agriculture Diploma program offers a practical education for persons interested in operating a farm or working in an agricultural business. Although many diploma graduates return to family farms after graduating, an increasing number of graduates can be found working for farm supply companies, feed companies, financial institutions and grain handling companies, as well as doing technical work for various government agencies.

The Agriculture Diploma program covers a wide range of agricultural subjects, from production through to marketing and business management. Communication and leadership skills also receive considerable emphasis. The program culminates in assignments and a major project that relate directly to the student's individual farm or business interests. The program extends over two winters. Classes begin in late September and end in early April to accommodate students with obligations to plant and harvest crops.

## 1.2 Available Programs, Options and Minors,

### 1.2.1 Bachelor of Science in Agriculture (Degree)

Available Programs: Agronomy  
Animal Systems  
Plant Biotechnology

### 1.2.2 Bachelor of Science in Agribusiness (Degree)

Available Options: Agricultural Economics  
Agribusiness Management  
International Agribusiness

### 1.2.3 Bachelor of Science in Agroecology (Degree)

### 1.2.4 Bachelor of Science in Food Science (Degree)

Available Options: Science Option  
Business Option

### 1.2.5 Pre-Veterinary Program (Degree)

### 1.2.6 Diploma in Agriculture

Available Options: Business Management  
Crop Management  
Livestock Management  
General Agriculture

### 1.2.7 Cooperative Education Program (Degree and Diploma Options)

### 1.2.8 Minors (Degree Program Only)

Available Minors: Animal Systems  
Entomology  
Food Science  
Plant Biotechnology



## Soil Science

**1.3 Professional Designations,**

Graduates of the B.Sc. (Agriculture), B.Sc. (Agribusiness), B.Sc. (Agroecology) and B.Sc. (Food Science) degrees are eligible to practice agronomy as members of the Manitoba Institute of Agrologists. An agrologist is a "person who is qualified to teach or to practice the science and art of agriculture or to conduct scientific experiments and research in relation thereto." The motto of the profession is *Ciba ad Omnes* (Food for All). B.Sc. (Food Science) graduates are eligible to become members of the Canadian Institute of Food Science and Technology (CIFST), a professional society associated with the manufacturing, processing and packaging of food.

**SECTION 2: Admission Requirements**

The following is a summary of the admission requirements. Equivalent academic courses completed at recognized universities elsewhere will be considered. All admission requirements, as well as application deadline dates and forms, are included in an applicant information bulletin that is available from the Admissions Office, Enrolment Services, 424 University Centre; this information is also posted on the university's website.

There are two entry options to Agricultural and Food Sciences: Direct entry from high school OR Advanced Entry (transfer from University 1).

**Direct Entry: Degree Program High School Prerequisites**

High School graduation with 5 credits at the Grade 12 S, G, or U level, with a minimum 85% average over a combination of:

- English 40S,
- Pre-Calculus Math 40S or Applied Math 40S (Recommended Pre-Calculus 40S for B.Sc. (Agribusiness) and B.Sc. (Food Science)), and the Pre-Veterinary Medicine Program.
- one of Biology 40S, Chemistry 40S, Physics 40S or Computer Science 40S
- with no mark less than 60% in each of the above areas.

**Advanced Entry Degree Program (transfer from University 1) High School Prerequisites:**

High school prerequisites for required University 1 courses include:

- Math: Pre-Calculus Math 40S (60%) for Agribusiness and Food Science programs. Pre-Calculus Math (60%) or Applied Math (70%) required for B.Sc. (Agriculture) includes Agronomy, Animal Systems, Plant Biotechnology and B.Sc. (Agroecology).

- Sciences: Biology 40S and Chemistry 40S required for B.Sc. (Agriculture), (Agroecology), and (Food Science). For B.Sc. (Agribusiness), Biology 40S is recommended but not required.
- Pre-Veterinary Medicine Program: Pre-Calculus Math 40S, Biology 40S, Chemistry 40S and Physics 40S.

Students without the prerequisites will need to take the required preparatory courses.

**2.1 Admission Requirements for the Degree Programs,**

The requirement for admission to the Faculty of Agricultural and Food Sciences is a minimum cumulative grade point average of 2.00 on a minimum of 24 credit hours from University 1 or other University programs.

It is recommended that students take the following courses in University 1 to allow completion of the degrees in the minimum amount of time.

**B.Sc. (Agribusiness)**

- Agriculture (9 credit hrs)

ABIZ 1000

AGRI 1500

AGRI 1510

- Biology (6 credit hrs)

BIOL 1020 (See Note 1)

BIOL 1030 (See Note 1)

- Chemistry (See Note 2)
- Economics (6 credit hrs)

ECON 1010

ECON 1020

- Mathematics (6 credit hrs)

MATH 1300 or MATH 1310

MATH 1500 or MATH 1520 (See Note 3)

- Open Electives (3 credit hrs)

**B.Sc. (Agriculture) and B.Sc. (Agroecology)**

- Agriculture (6 credit hrs)



AGRI 1500

AGRI 1510

- Biology (6 credit hrs)

BIOL 1020

BIOL 1030

- Chemistry (6 credit hrs)

CHEM 1300

CHEM 1310 or CHEM 1320

- Economics (6 credit hrs)

ECON 1010

ECON 1020

- Mathematics (3 credit hrs)

MATH 1200 or MATH 1210 or MATH 1300 or  
MATH 1310 or MATH 1500 or MATH 1520

- Open Electives (3 credit hours)

B.Sc. (Food Science)

- Agriculture (6 credit hrs)

AGRI 1500

AGRI 1510

- ABIZ 1000 (See Note 4)
- Biology (6 credit hrs)

BIOL 1020

BIOL 1030

- Chemistry (6 credit hrs)

CHEM 1300

CHEM 1310 and CHEM 1320 (See Note 5)

- Economics (6 credit hrs)

ECON 1010

ECON 1020

- Mathematics (6 credit hrs)

MATH 1300 or MATH 1310 and

MATH 1500 or MATH 1520 (See Note 3)

- Open Electives (nil)

**Notes:**

1) Students planning to enter the B.Sc. (Agribusiness) degree program are recommended to take BIOL 1020 and BIOL 1030 but may substitute BIOL 1000 and BIOL 1010.

2) Students planning to enter the B.Sc. (Agribusiness) degree program are not required to take chemistry at the university level.

3) Six credit hours of Math courses, including MATH 1500 Introduction to Calculus or MATH 1520 Introduction to Calculus for Management and Social Sciences are required for the B.Sc. (Agribusiness) and B.Sc. (Food Sciences) programs. In addition the B.Sc. (Agribusiness) program also requires MATH 1300 Vector Geometry and Linear Algebra or MATH 1310 Matrices for Management and Social Sciences.

4) ABIZ 1000 is not required for the B.Sc. Food Science (Food Science option). It is required in the B.Sc. Food Science (Business option).

5) Both CHEM 1310 and CHEM 1320 are required for the B.Sc. (Food Science) Science Option Program.

**Other requirements:**

High school requirements include Math 40S (Pre-Calculus) (60%) and Biology 40S (50%) for all degree programs, Chemistry 40S (50%) for B.Sc. (Agriculture) includes Agronomy, Animal Systems, Plant Biotechnology, B.Sc. (Agroecology) and B.Sc. (Food Science) students; pre-veterinary students should include Chemistry 40S, Biology 40S and Physics 40S.

Students are required to take three credit hours of Philosophy in their degree.

The written English and Mathematics requirements are met by completing the required courses in Agriculture.

*Applicants who do not meet the above-mentioned course requirements may be eligible for admission. Please contact*



the Academic Advisor (Degree), Faculty of Agricultural and Food Sciences at (204) 474-8269, for further information.

### First Year Agriculture: Brandon University

Brandon University offers the first year of the Agriculture degree program of the Faculty of Agricultural and Food Sciences. Under arrangements between the two universities, students who complete the first-year Agriculture program at Brandon University may apply for admission with full credit into the second year programs of the University of Manitoba.

### Transfers of Credit

School of Agriculture graduates who have obtained a GPA of 3.0 in the Agriculture Diploma program are eligible for 60 credit hours of transfer into the following degree programs: Bachelor of Science (Agribusiness), Bachelor of Science (Agroecology), Bachelor of Science (Agriculture) – Agronomy or Animal Systems, when transferring into the same stream. If students choose to change streams it *may* not be possible to transfer the entire 60 credit hours due to program requirements; students should contact the Student Services Office for details. Grade will be transferred for those courses considered on a one-to-one basis (see below); the remaining credit hours will be transferred without grades. This transfer articulation is applicable to diploma graduates who have entered the degree program as of September 2005.

Students wishing to enter a degree program without the above qualifications will be evaluated on a course-by-course basis. Students should have a cumulative grade point average of 2.50 and a C+ or better in courses for which transfer is being considered.

The Bachelor of Science (Agriculture), Plant Biotechnology, and the Bachelor of Science (Food Science) are not part of this articulation. Students should contact the Student Services Office for details on transfer into these programs.

A Table of the Transfer of Credit courses between Diploma and Degree can be found at [www.umanitoba.ca/afs](http://www.umanitoba.ca/afs). Students inquiring about transfer of credits should contact the Student Services Office at 474-9295.

Courses taken outside the Faculty of Agricultural and Food Sciences or outside of the University of Manitoba may also qualify for credit towards the degree if the course content and the student's performance are deemed appropriate by the department concerned.

2.2 Admission Requirements for the Diploma Program, Diploma students enter directly to the Agriculture diploma program from high school; University 1 is not required.

Applicants for the incoming class of September 2012 should be high school graduates with Grade 12 standing in English, Mathematics, and one Science course - - normally one of Biology, Chemistry or Physics.

Applicants for the incoming class of September 2013 must hold Manitoba high school graduation with a minimum of five Grade 12 credits at the S (Specialized), G (General) or U (Dual Credit-University) level, which include English 40S, Mathematics (40S or 45S) and a Science 40S. The minimum average over these three designated subjects is 60%. The equivalent level of studies from other Canadian provinces or other countries will be accepted.

Students without a suitable high school standing may be admitted upon the recommendation of the Diploma Selection Committee. The committee will review each application and interview the applicant. The maturity, scholastic ability and agricultural experience of the applicant will be considered. Please contact the Academic Advisor (Diploma), Faculty of Agricultural and Food Sciences at (204) 474-6066, for further information.

### Transfer of Credit

Courses taken within the degree program in the Faculty of Agricultural and Food Sciences as well as outside the Faculty of Agricultural and Food Sciences or outside of the University of Manitoba may also qualify for credit towards the diploma if the course content and the student's performance are deemed appropriate by the department concerned.

## SECTION 3: Faculty Academic Regulations

### 3.1 Academic Regulations for Degree Program,

The B.Sc. (Agriculture), B.Sc. (Agribusiness), B.Sc. (Agroecology) and B.Sc. (Food Science) degree programs have the triple objectives of vocational, professional and cultural education. To fulfil the objectives, the degrees are offered in a program of study. Most courses in first year, which are taken in University 1 and some in second year, are prescribed. The remainder of second year courses and all courses in third and fourth years are determined by the program of study, and by the student's selection of elective courses.

It is strongly recommended that all students plan their coursework for third and fourth years before the end of their second academic year.

The provisions of the chapter, General Academic Regulations and Requirements, and the chapter, University Policies, apply to all students. In addition, the Faculty of Agricultural and Food Sciences has regulations and requirements, published below, that apply specifically to its students. Supplementary academic regulations are on file in the general office. Admission information can be found in the Admissions chapter of this *Calendar*.

### Scholastic Requirements

To obtain a B.Sc. (Agriculture), B.Sc. (Agribusiness), B.Sc. (Agroecology) or B.Sc. (Food Science) degree, a student must pass 120 credit hours normally comprised of 30 hours from University 1 and 90 hours in the Faculty of Agricultural



and Food Sciences (i.e., a total of 20 full-courses or the equivalent).

A maximum of 144 credit hours (24 full-courses or the equivalent) may be attempted to obtain the 120 credit hours.

A minimum passing grade of "D" in prescribed courses is required of all students in the faculty.

Elective courses in which passing grades were not obtained need not be repeated.

A student's Grade Point Average (GPA) will be determined from the number of "effective" courses which apply at a particular stage. The effective courses consist of all courses passed in addition to all failures which have not been cleared or substituted for in the student's record.

#### Probational Standards

Effective Courses to Date

1-10	(0-30 credits)
11-20	(33-60 credits)
21-30	(63-90 credits)
31-40	(93-120 credits)
40+	(120+credits)

Minimum GPA

1.80
1.85
1.90
1.95
2.00

#### Academic Suspension Regulations

A student is placed on academic suspension when one of the following occurs:

- When a student fails to obtain 12 Weighted Grade Points in the first year program; or
- When a student fails to meet the probational standards after attempting a minimum of 24 credit hours while on probation; or
- When a student accumulates failures in excess of 24 credit hours.

#### Re-entry Regulations

A student must remain out of faculty for a period of one year and then apply for re-entry.

The student must complete at least 12 credit hours with a minimum Grade Point Average of 2.50 in courses approved by the faculty in the academic term or session in which reinstatement is being attempted.

The student loses credit for all courses in which a grade of "D" was obtained prior to being reinstated.

The student is given credit for courses in which grades of "C" or better were obtained, as well as the courses attempted for reinstatement.

In order to graduate, students must obtain a minimum GPA of 2.0 calculated over the final 120 credit hours before graduation.

#### Residence Requirements of Degree Program

The residence requirements for the degrees offered by the Faculty of Agricultural and Food Sciences, can be found in the chapter, General Academic Regulations and Policy.

#### Time Limits and Lapse of Credit

The normal maximum time allowed for the completion of the Agriculture degree programs is ten years from the date of first registration. A candidate for a degree will not be permitted to count toward that degree any courses taken more than ten year prior to the date of awarding the degree.

The student is reinstated and placed in the category of "good academic standing."

A student who is placed on academic suspension for the second time, will not be permitted reinstatement in the faculty.

#### Appeals

Appeals of academic assessment of students must be submitted to the general office of the Faculty of Agricultural and Food Sciences within 21 days of the date of notification of the action sent to the student.

#### Supplemental Exams

Supplemental Exams are not permitted in the Faculty of Agricultural and Food Science Degree Programs.

#### Re-registration of Returning Degree Students

All degree students who were previously admitted to the Faculty of Agricultural and Food Sciences who have not been in attendance for one or more years must re-register through the Dean's Office. Application for re-registration must take place before July 1 for those students who wish to begin their studies in the Fall term and before November 1 for those students who wish to begin their studies in Winter Term. Students returning to the faculty will be subject to compliance with the current program requirements.

#### Graduation With Distinction: Degree Programs



The B.Sc. (Agriculture), B.Sc. (Agribusiness), B.Sc. (Agroecology), and the B.Sc. (Food Science) degrees with distinction will be awarded to students who have achieved a minimum degree GPA of 3.75 upon graduation.

#### Dean's Honour Roll

Students who have completed a minimum of 12 credit hours of study in either the Fall or Winter terms and who achieved a Term GPA of 3.50 or higher will be placed on the Dean's Honour Roll. Graduating students who achieved Dean's Honour Roll status in the previous term but complete less than 12 credit hours in their final term with a Term GPA of 3.5 or greater, will be eligible to remain on the Dean's Honour Roll.

#### Course Load Limits

A normal "course load" is 30 credit hours during the regular session, with 15 credit hours normally taken in each academic term. A student may attempt a maximum of 39 credit hours during the regular session, with not more than 21 credit hours in an academic term, provided the student is in a good academic standing and has completed at least 24 credit hours in the previous regular session.

#### University Written English and Mathematics Requirements

All students are required to complete the university written English and Mathematics requirement within the first 60 credit hours of their program. This requirement is described in the chapter, General Academic Regulations and Requirements of this *Calendar*.

For the degree program in Agriculture, the university written English requirement can be met by AGRI 2030 Technical Communications, or by ENGL 1200, or ENGL 1300. (NOTE: Technical Communications cannot be taken in University 1). The mathematics requirement can be met by completing MATH 1200 or MATH 1210 or MATH 1300 or MATH 1310 or MATH 1500 or MATH 1520, or STAT 1000.

#### 3.2 Academic Regulations for Diploma Program, Requirements for Graduation

To qualify for the Diploma in Agriculture a student must have attained a cumulative GPA of at least 2.00 with a minimum

grade of "D" in courses totalling 93 credit hours including all those on the prescribed list. Elective courses in which failures were obtained may be substituted for and need not be repeated, except to help meet the requirements of the scholastic standards described previously.

#### Part-Time vs. Full-Time Status for Students

A student is considered to be equivalent to full-time if at least 60 per cent of the normal full-time course load is attempted in the academic term or session. (A normal full-time course load is usually 48-52 credit hours during the regular session.) A student will be allowed to take a partial course load with the permission of the Director of the School of Agriculture and the payment of pro-rated fees.

#### Transfers of Credit From Other Programs

Courses taken within the undergraduate degree programs of the Faculty of Agricultural and Food Sciences can qualify for credit towards the Agriculture Diploma program. See Academic Regulations in the Degree section. Courses taken outside the Faculty of Agricultural and Food Sciences or outside of the University of Manitoba can qualify for credit towards the Agriculture Diploma program if the course content and the student's performance are deemed appropriate by the department concerned.

Students who desire to receive such credit should contact the Academic Advisor of the School of Agriculture.

#### Agriculture Diploma to Degree Transfer of Credit Hours

School of Agriculture graduates who have obtained a GPA of 3.0 in the Agriculture Diploma program are eligible for 60 credit hours of transfer into the following degree programs: Bachelor of Science (Agribusiness), Bachelor of Science (Agroecology), Bachelor of Science (Agriculture) – Agronomy or Animal Systems, when transferring into the same academic stream. If students choose to change streams it *may not* be possible to transfer the entire 60 credit hours due to program requirements; students should contact an Academic Advisor in the Student Services Office for details. Students wishing to enter a degree program without the above qualifications will be evaluated on a course-by-course basis. This transfer articulation is applicable to diploma graduates who have entered the degree program as of September 2005.



**Transfer of Credits Diploma/Degree**

**Diploma**

BIOE 0600 Farm Machinery

**Degree**

BIOE 2090 Machinery for Ag  
Production

ANSC 0420 Animal Biology &  
Nutrition

ANSC 2500 Animal Production

ANSC 0670 Beef Production  
and PLNT 0750 Forage &  
Pasture Mgmt or ANSC 0680  
Dairy Cattle Production & Mgmt  
and PLNT 0750 Forage &  
Pasture Mgmt

ANSC 4520 Ruminant Production  
Systems Meat or ANSC 4530  
Ruminant Production Systems  
Milk

ANSC 0600 Animal Health and  
Welfare and ANSC 0690 Swine  
Production or ANSC 0600  
Animal Health & Welfare and  
ANSC 0700 Poultry Production

ANSC 4540 Monogastric Produc  
tion Systems or ANSC 4550 Avian  
Production Systems

ENTM 0620 Pest Mgmt & Farm  
In sects

NTM 0010 Unallocated

PLNT 0410 Cereal & Oilseeds

PLNT 2500 Crop Production

PLNT 0790 Landscape Horticul  
ture and PLNT 0800 Diversifica  
tion with Horticultural Crops

PLNT 2510 Fundamentals of  
Horticulture

PLNT 0770 Weed Mgmt

PLNT 3540 Weed Science

SOIL 0420 Soil Productivity &  
Land Use and DAGR 0420 Intro  
Soils & Crops

SOIL 3600 Soils and Landscapes  
in Our Environment

SOIL 0620 Soil Conservation &  
Mgmt and BIOE 0690 Water  
Mgmt

SOIL 4510 Soil & Water Mgmt

ABIZ 0440 Ag Econ & Marketing  
1 and ABIZ 0450 Ag Econ &  
Marketing 2

ABIZ 2510 Agricultural Marketing

ABIZ 0730 Financial Risk Mgmt

ABIZ 3120 Commodity Futures  
Markets

ABIZ 0680 Ag Business Mgmt

ABIZ 1000 Ag Business Mgmt



ABIZ 0720 Farm Business Mgmt ABIZ 3530 Farm Management

065.064 Mgmt Plan Project I  
and 065.065 Mgmt Plan Project  
II ABIZ 0010 Unallocated

DAGR 0680 Mgmt Plan I and  
DAGR 0690 Mgmt Plan Project  
II ABIZ 0010 Unallocated

DAGR 0420 Intro Soils & Crops AGRI 1500 Natural Resources &  
Ag Production

DAGR 0020 Unallocated AGRI 1510 Utilization of Ag Prod

DAGR 0410 Communications &  
Learning Skills (min B grade) AGRI 2030 Technical  
Communications

### Scholastic Standards

To maintain good academic standing a student must maintain a Degree Grade Point Average (DGPA) that meets or exceeds the minimum academic standards described in the table below. The standards are based on the total

number of credit hours accumulated while in the Agriculture Diploma program, including courses taken during the term in question. A student who fails to meet the standard is placed on probation or on academic suspension.

#### Degree Credit Hours

0 -- 17  
18 -- 24  
25 -- 48  
Over 48

#### Degree Grade Point Average (DGPA)

Degree Credit Hours	Probation	Suspension
0 -- 17	---	1.00
18 -- 24	1.80	1.60
25 -- 48	1.90	1.70
Over 48	2.00	1.85

#### NOTES:

1) Degree Credit Hours includes courses passed and failures not removed by supplemental exams or successful reattempts.

2) When both a final and supplemental exam are written the higher grade obtained will be used to determine Grade Point Averages.

3) A minimum of 18 credit hours must be attempted between successive determinations of standing. The minimum does not apply to students who graduate before completing an additional 18 credit hours.

#### Probation Standards and Academic Suspension Regulations

Students on probation must improve their academic performance and regain good academic standing to avoid being suspended. Specifically, after an attempt of a minimum of 18 additional credit hours, students on probation are required to equal or exceed the probation standard in order to regain good academic standing, otherwise they will be placed on academic suspension.

A student on academic suspension is not allowed to register for the subsequent term of the regular academic session (a student suspended in January may not be reinstated until the following September; a student suspended in April may not be reinstated until the following January). Reinstatement requires the approval of the Director. Students should contact the Academic Advisor for further instructions. If reinstatement is granted, all courses from the student's previous attempt will be transferred, except those with a grade of "D" or "F" from their last term (the term during which the student was placed on suspension).



## Appeals

Appeals of academic assessment of students must be submitted to the Director of the School of Agriculture within 21 days of the date of notification of the action sent to the student.

## Supplemental Exams

Any student in good academic standing (i.e., not on probation or suspension; see previous table of Scholastic Standards) is eligible to write one supplemental exam during each academic session in a course in which an "F" was received. The student must have written the final exam. The supplemental exam shall be considered as a replacement for the final exam only, not for term work. The passing grade in supplementals must be at least "C" (2.0). Students are normally required to carry a full-term program in order to be eligible. Accordingly, students who are granted incomplete or deferred status may not be eligible. When both a final and supplemental exams are written the higher grade obtained will be used to determine the final grade.

Supplemental Exams will be held in January for courses taken in the first term and in June for courses in the second term.

## Time Limits and Lapse of Credit

The normal maximum time allowed for the completion of the Agriculture Diploma is five years from the date of first registration. A candidate for a Diploma in Agriculture will not be permitted to count toward that diploma any courses taken more than five years prior to the date of awarding the diploma.

Students who desire an exemption from this maximum must apply, in writing, to the Director.

## Dean's Honour Roll

### 4.1.1 Faculty Core,

Course No.	Credit Hours	
ABIZ 1000	Introduction to Agribusiness Management (see Note 1)	3
AGRI 1500	Natural Resources and Primary Agricultural Production	3
AGRI 1510	Production, Distribution and Utilization of Agricultural Products	3
AGRI 2030	Technical Communications	3
BIOL 1020	Biology 1: Principles and Themes (See Note 2)	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interactions (See Note 2)	3
CHEM 1300	University 1 Chemistry: Structure and Modelling in Chemistry (see Notes 3 and 4) and one of the following two courses:	3
CHEM 1310	University 1 Chemistry: An Introduction to Physical Chemistry (see Notes 3 and 4) or	3
CHEM 1320	University 1 Chemistry: An Introduction to Organic Chemistry (see Notes 3 and 4)	3
ECON 1010	Introduction to Microeconomic Principles	3
ECON 1020	Introduction to Macroeconomic Principles	3
MATH 1200	Elements of Discrete Mathematics (See Note 5) or	
MATH 1210	Techniques of Classical and Linear Algebra (See Note 5) or	
MATH 1300	Vector Geometry and Linear Algebra (See Note 5) or	

Students registered in at least 36 credit hours and who obtain a sessional GPA of 3.50 or higher will be placed on the Dean's Honour roll.

## Graduation with Distinction

The Diploma in Agriculture with Distinction will be awarded to Diploma students who obtain a cumulative GPA of 3.75 or better with 75 per cent of the courses taken within the Diploma in Agriculture.

### 3.3 Course Availability,

All courses listed in this *Calendar* are not offered every year. The course(s) offered for the current academic term are published in the *Class Schedule*.

## SECTION 4: Program and Graduation Requirements

### 4.1 Degree Programs

Intro,

In order to fulfil the requirements for a degree in the Faculty of Agricultural and Food Sciences, students must complete five components:

- Faculty Core
- Degree Core
- Program Core
- Restricted Electives
- Free Electives

These requirements are outlined for all four degrees in the sections which follow.



MATH 1310	Matrices for Management and Social Sciences (See Note5)	
	or	
MATH 1500	Introduction to Calculus (See Note5)	
	or	
MATH 1520	Introductory to Calculus for Management and Social Sciences (See Note 5)	3
STAT 1000	Basic Statistical Analysis 1	3
<b>Three credit hours from the following:</b>		
PHIL 1290	Critical Thinking (3)	
PHIL 2740	Ethics and Biomedicine (3)	
PHIL 2750	Ethics and the Environment (3)	
PHIL 2830	Business Ethics (3)	3
<b>Total credit hours</b>		<b>33-39</b>

**NOTES:**

- 1) ABIZ 1000 is not required for the B.Sc. Food Science (Food Science option). It is required in the B.Sc. Food Science (Business option).
- 2) Students planning to enter the B.Sc. (Agribusiness) degree program are recommended to take BIOL 1020 and BIOL 1030 but may substitute BIOL 1000 and BIOL 1010.
- 3) Students planning to enter the B.Sc. (Agribusiness) degree program are not required to take chemistry at the university level.
- 4) Both CHEM 1310 and CHEM 1320 are required for the B.Sc. (Food Science) Science Option Program.
- 5) Six credit hours of Math courses, including MATH 1500 Introduction to Calculus or MATH 1520 Introduction to Calculus for Management and Social Sciences are required for the B.Sc. (Agribusiness) and B.Sc. (Food Sciences) programs. In addition the B.Sc. (Agribusiness) program also requires MATH 1300 Vector Geometry and Linear Algebra or MATH 1310 Matrices for Management and Social Sciences.

**4.1.2 Bachelor of Science (Agriculture) 1**

The four year program (one year in University 1 and three years in the Faculty of Agricultural and Food Sciences) leading to the B.Sc. (Agriculture) is a professional program which prepares graduates for careers in the public and private sectors related to the production and distribution of agricultural commodities. Graduates will also be prepared to enter directly into a program of graduate studies. In addition to the faculty core courses, all students are required to take the following B.Sc. (Agriculture) degree core requirements and the respective program core courses.

**B.Sc. (Agriculture) Degree Core**

Course No.		Credit Hours
AGEC 2370 (BIOL 2300)	Principles of Ecology	3
CHEM 2770 (MBIO 2770)	Elements of Biochemistry 1	3
PLNT 2520 (BIOL 2500)	Genetics	3
<b>Total credit hours</b>		<b>9</b>

Within the B.Sc. (Agriculture) students will elect one of three programs of study or specialities -- Agronomy, Animal Systems or Plant Biotechnology. Students will normally begin the program of study of their choice in second year. A description of each program and their requirements follows.

**Agronomy Program**

**Chair:** P. Bullock  
**Office:** 313 Ellis Building  
**Telephone:** (204) 474-8666

The Agronomy program, which students enter into after completing University 1, will provide an integrated and comprehensive study of the factors and processes associated with the science of crop production and the management and use of land and water resources. The program emphasizes land management and the sustainability of agronomic and horticultural crop systems.

**Agronomy Core**

Course No.		Credit Hours
ABIZ 2510	Introduction to Agricultural and Food Marketing	3



ANSC 2500	Animal Production	3
BIOL 2242	The Flowering Plants	3
PLNT 2500	Crop Production	3
PLNT 3500	Plant Physiology	3
PLNT 3510	Cropping Systems	3
PLNT 4590	Physiology of Crop Plants	3
SOIL 3600	Soils and Landscapes in Our Environment	3
SOIL 4510	Soil and Water Management	3
SOIL 4520	Soil Fertility	3

**Total credit hours** 30

**Restricted Electives**

**Group 1**

Two courses (six credit hours) from the following:

ENTM 3170	Crop Protection Entomology (3)	
PLNT 3540	Weed Science (3)	
PLNT 4270	Plant Disease Control (3)	6

**Group 2**

One course (three credit hours) from the following:

ANSC 4410/	Grassland Agriculture: Plant, Animal and Environment (3)	
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PLNT 4410		
PLNT 2510	Fundamentals of Horticulture (3)	
PLNT 3520	Principles of Plant Improvement (3)	3

**Group 3**

One course (three credit hours) from the following:

SOIL 3060	Introduction to Agrometeorology (3)	
SOIL 4060	Physical Properties of Soils (3)	
SOIL 4130	Soil Chemistry and Mineralogy (3)	
SOIL 4400	Soil Ecology (3)	3

**Group 4**

One course (three credit hours) from the following:

BIOE 2090	Machinery for Agricultural Production (4)	
BIOE 4500	Water Management (3)	
BIOE 4520	Crop Preservation and Handling (3)	
GEOG 2250	Introduction to Geographic Information Systems (3)	3/4
Free Electives		27

**Suggested Progression of Program:**

**Second Year**

Course No.		Credit Hours
ABIZ 1000	Introduction to Agribusiness Management	3
AGRI 2030	Technical Communications	3
BIOL 2242	The Flowering Plants	3
CHEM 2770	Elements of Biochemistry 1	3

(MBO 2770)		
PLNT 2500	Crop Production	3
PLNT 2520	Genetics	3
SOIL 3600	Soils and Landscapes in Our Environment	3
	Free elective(s)	9

**Total credit hours** 30

**Third Year**

ABIZ 2510	Introduction to Agricultural and Food Marketing	3
AGEC 2370 (BIOL 2300)	Principles of Ecology	3
ANSC 2500	Animal Production	3
PLNT 3500	Plant Physiology	3
PLNT 4590	Physiology of Crop Plants	3
STAT 1000	Basic Statistical Analysis 1	3
	Restricted and/or Free Electives	12

**Total credit hours** 30

**Fourth Year**

PLNT 3510	Cropping Systems	3
SOIL 4510	Soil and Water Management	3
SOIL 4520	Soil Fertility	3



	Restricted and/or Free Electives	21
<b>Total credit hours</b>		<b>30</b>

**4.1.2 Bachelor of Science (Agriculture) 2,  
Animal Systems Program**

**Chair:** M. L. Connor

**Office:** 201 Animal Science Building

**Telephone:** (204) 474-9219

The Animal Systems program, which students enter after completing University 1, will provide an integrated and comprehensive study of the factors and processes associated with the science of animal production. The program will be based on a strong foundation in the scientific disciplines underlying growth and reproduction in animals and how they respond to a range of environmental systems and constraints.

**Animal Systems Core**

<b>Course No.</b>		<b>Credit Hours</b>
ABIZ 2510	Introduction to Agricultural and Food Marketing	3
ANSC 2500	Animal Production	3
ANSC 2510	Anatomy and Physiology 1: Control Systems	3
ANSC 2520	Anatomy and Physiology 2: Nutrient Utilization	3
ANSC 3500	Principles of Animal Genetics	3
ANSC 3510	Feeds and Feeding	3
ANSC 3520	Animal Reproduction	3
ANSC 3530	The Animal and Its Environment	3
ANSC 4560	Issues in Animal Agriculture	3
CHEM 2780 (MBIO 2780)	Elements of Biochemistry 2	3
PLNT 2500	Crop Production	3
<b>Total credit hours</b>		<b>33</b>

**Restricted Electives**

**Group 1**

One course (three credit hours) from the following:

ANSC 4520	Ruminant Production Systems - Meat (3)	
ANSC 4530	Ruminant Production Systems - Milk (3)	3

**Group 2**

One course (three credit hours) from the following:

ANSC 4540	Monogastric Production Systems (3)	
ANSC 4550	Avian Production Systems (3)	3

**Group 3**

Two courses (six credit hours) from the following:

AGEC 4510	Applications in Agroecology (3)	
ANSC 2530	Nutritional Toxicology (1.5) and AGRI 2190 Toxicology Principles (1.5)	
ANSC 2540	Companion Animal Nutrition and Management (3)	
ANSC 4090	Livestock Problems (3)	
ANSC 4220	Animal Science Investigations (3)	
ANSC 4280	Applied Animal Genetics (3)	
ANSC 4410	Grassland Agriculture: Plant, Animal and Environment (3)	

/PLNT 4410

ANSC 4500	Animal Health (3)	
ANSC 4510	Domesticated Animal Behaviour (3)	
ANSC 4570	Advanced Applied Animal Nutrition (3)	
ENTM 3160	Veterinary and Wildlife Entomology (3)	
FOOD 3500	Processing of Animal Food Products (3)	
PLNT 2530	Plant Biotechnology (3)	6

**Group 4**

One course (three credit hours) from the following:

GMGT 2030	Administrative Theory (3)	
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GMGT 3120	Regulation (3)	
HRIR 2440	Human Resource Management (3)	3

**Free Electives** 24

Students are encouraged to take free electives from the following courses:

ANSC 2530	Nutritional Toxicology (1.5)
ANSC 4570	Advanced Applied Animal Nutrition (3)
ANSC 4090	Livestock Problems (3)
ANSC 4220	Animal Science Investigations (6)
PLNT 2530	Plant Biotechnology (3)
AGEC 4510	Applications in Agroecology (3)

**Suggested progression of program:**

**Second Year**

Course No.		Credit Hours
ABIZ 1000	Introduction to Agribusiness Management	3
AGRI 2030	Technical Communications	3
ANSC 2500	Animal Production	3
ANSC 2510	Anatomy and Physiology 1	3
ANSC 2520	Anatomy and Physiology 2	3
CHEM 2770 (MBIO 2770)	Elements of Biochemistry 1	3
CHEM 2780 (MBIO 2780)	Elements of Biochemistry 2	3
PLNT 2500	Crop Production	3
PLNT 2520	Genetics	3
	Restricted and free electives	3
<b>Total credit hours</b>		<b>30</b>

**Third Year**

ABIZ 2510	Introduction to Agricultural and Food Marketing	3
AGEC 2370 (BIOL 2300)	Principles of Ecology	3
ANSC 3500	Principles of Animal Genetics	3
ANSC 3510	Feeds and Feeding	3
ANSC 3530	The Animal and Its Environment	3
STAT 1000	Basic Statistical Analysis	3
	Restricted and/or Free Electives	12
<b>Total credit hours</b>		<b>30</b>

**Fourth Year**

ANSC 3520	Animal Reproduction	3
ANSC 4560	Issues in Animal Agriculture	3
	Restricted Elective - Group 1	3
	Restricted Elective - Group 2	3
	Restricted and/or Free Electives	18
<b>Total credit hours</b>		<b>30</b>

**4.1.2 Bachelor of Science (Agriculture) 3,**

**Plant Biotechnology Program**

**Chair:** A. Brûlé-Babel

**Office:** 247A Agriculture Building

**Telephone:** (204) 474-6062

The Plant Biotechnology Program which students enter after University 1 will provide an integrated and comprehensive study of genetic, physiological and pathological factors and modern technological processes associated with the sciences of plant improvement, production, protection, and utilization. The program will provide an understanding of the biological principles that determine the heredity, growth, and responses of plants and plant pathogens to cultural and environmental factors.

**Plant Biotechnology Core**

Course No.		Credit Hours
BIOL 2242	The Flowering Plants	3
BIOL 2260	Biology of Fungi and Lichens	3
BIOL 2520	Cell Biology	3
CHEM 2780 (MBIO 2780)	Elements of Biochemistry 2	3



MBIO 1010	Microbiology 1	3
PLNT 2530	Plant Biotechnology	3
PLNT 3500	Plant Physiology	3
PLNT 4600	Issues in Agricultural Biotechnology	3

**Total credit hours** 24

**Restricted Electives**

**Group 1**

Two courses (six credit hours) of the following:

ANSC 2500	Animal Production (3)
ANSC 4410/	Grassland Agriculture: Plant, Animal and Environment (3)

PLNT 4410		
ENTM 3170	Crop Protection Entomology (3)	
PLNT 2500	Crop Production (3)	
PLNT 2510	Fundamentals of Horticulture (3)	
PLNT 3540	Weed Science (3)	6

**Group 2**

Five courses (fifteen credit hours) of the following:

PLNT 3520	Principles of Plant Improvement (3)	
PLNT 3570	Fundamentals of Plant Pathology (3)	
PLNT 4310	Introductory Plant Genomics	
PLNT 4330	Intermediate Plant Genetics (3)	
PLNT 4550	Developmental Plant Biology (3)	
PLNT 4560	Secondary Plant Metabolism (3)	
PLNT 4570	Research Methods in Plant Pathology (3)	
PLNT 4580	Molecular Plant-Microbe Interactions (3)	
PLNT 4590	Physiology of Crop Plants (3)	
PLNT 4610	Bioinformatics (3)	15

Free Electives 27

**Suggested progression of program:**

**Second Year**

Course No.		Credit Hours
BIOL 2242	The Flowering Plants	3
BIOL 2260	Biology of Fungi and Lichens	3
CHEM 2770 (MBIO 2770)	Elements of Biochemistry 1	3
CHEM 2780 (MBIO 2780)	Elements of Biochemistry 2	3
BIOL 2520	Cell Biology	3
PLNT 2520	Genetics	3
PLNT 2530	Plant Biotechnology	3
AGRI 2030	Technical Communications	3
	Free and/or restricted electives	6
<b>Total credit hours</b>		<b>30</b>

**Third Year**

STAT 1000	Basic Statistical Analysis 1	3
PLNT 3500	Plant Physiology	3
MBIO 1010	Microbiology 1	3
AGEC 2370 (BIOL 2300)	Principles of Ecology	3
ABIZ 1000	Introduction to Agribusiness Management	3
	Free and/or restricted electives	15
<b>Total credit hours</b>		<b>30</b>

**Fourth Year**

PLNT 4600	Issues in Agricultural Biotechnology	3
	Free and/or restricted electives	27
<b>Total credit hours</b>		<b>30</b>



#### 4.1.3 Bachelor of Science (Agribusiness),

**Chair:** B. Oleson

**Office:** 356 Agriculture Building

**Telephone:** (204) 474-9384

**Program Advisor:** G. Johnson

**Office:** 379 Agriculture Building

**Telephone:** (204) 474-9795

Agribusiness students specialize in the people component of agriculture. This begins with the consumer, ends with the producer and involves all those along the food chain. Food production and distribution is undertaken in a business environment and agribusiness is the study of decision-making within this setting. Graduates gain insight into the agribusiness environment through mastering concepts in economics, finance, marketing and management. In addition to the faculty core courses, all students are required to take the B.Sc. (Agribusiness) degree core requirements. Students in Agribusiness are not required to take University 1 Chemistry as part of the Faculty Core requirement.

Through the choice of restricted electives, students will specialize in either agricultural economics, agribusiness management or international agribusiness. The respective agricultural economics, agribusiness management or international agribusiness options involve selecting restricted electives from courses offered by either the [Department of Economics](#), or the [Faculty of Management](#), or the [Faculty of Arts](#) through their cross-disciplinary programs.

Students selecting an option in agricultural economics can declare a minor in economics, and by meeting the additional requirements can qualify for a major in economics as well.

The international agribusiness option involves taking a minor in one of the cross disciplinary programs in the Faculty of Arts. International agribusiness requires knowledge of languages, cultures, and international political history, in addition to the other business skills required by the B.Sc. (Agribusiness) degree.

#### B.Sc. (Agribusiness) Degree Core Course Requirements

Course No.		Credit Hours
ABIZ 2510	Introduction to Agricultural and Food Marketing	3
ABIZ 2520	Introduction to Management Science	3
ABIZ 3080	Introduction to Econometrics	3
ABIZ 3510	Economics of Food Policy	3
ABIZ 4500	Agribusiness Strategies Seminar	3
ACC 1100	Introductory Financial Accounting	3
ECON 2450	Microeconomic Theory and Its Applications 1	3
ECON 2470	Macroeconomic Theory and Its Applications 1	3
HRIR 2440	Human Resource Management	3
MATH 1300	Vector Geometry and Linear Algebra	
	or	
MATH 1310	Matrices for Management and Social Sciences	3
	and	
MATH 1500	Introduction to Calculus	
	or	
MATH 1520	Introduction to Calculus for Management and Social Sciences	3
STAT 2000	Basic Statistical Analysis 2	3
<b>Total Credit Hours</b>		<b>36</b>

#### Restricted Electives

##### Group 1

Three courses (nine credit hours) from the following:

ABIZ 2390 Introduction to Environmental Economics (3)

AGEC 2370\* Principles of Ecology (3)

(BIOL 2300)\*

ANSC 2500 Animal Production (3)

PLNT 2500 Crop Production (3)

9

\*These courses require BIOL 1020 and BIOL 1030

##### Group 2

Two courses (six credit hours) from the following:

ABIZ 3120 Commodity Futures Markets (3)

ABIZ 3530 Farm Management (3)



ABIZ 3540	Financial Risk Management (3)	
ABIZ 4260	Price Analysis (3)	6

Students must fulfil the requirements of one of the following options:

**Agricultural Economics Option**  
At least nine credit hours from the Department of Economics, with three credit hours at the 3000 level. 9

**Agribusiness Management Option**  
At least nine credit hours from the Faculty of Management 9

**International Agribusiness Options**  
Minor in Asian Studies or Central and East European Studies or Lat in American Studies as defined in the Faculty of Arts chapter of this Calendar under cross-disciplinary programs. 18

Free electives 21-30

**Students are encouraged to take free electives from the following ten courses:**

ABIZ 1010	Economics of World Food Issues and Policies
ABIZ 2120	World Agribusiness Study Tour
ABIZ 2210	Transportation Principles
ABIZ 3120	Commodity Futures Markets
ABIZ 3520	Food Distribution and International Merchandising
ABIZ 3530	Farm Management
ABIZ 3550	Environmental Policy
ABIZ 3560	Agribusiness Portfolio Management
ABIZ 4120	Intermediate Econometrics
ABIZ 4260	Price Analysis

**Suggested progression of program:**

**Second Year**

Course No.		Credit Hours
ABIZ 1000	Introduction to Agribusiness Management*	3
ABIZ 2510	Introduction to Agricultural and Food Marketing	3
ABIZ 2520	Introduction to Management Sciences	3
AGRI 2030	Technical Communications	3
ACC 1100	Introductory Financial Accounting	3
ECON 2450	Microeconomic Theory and Its Applications 1	3
ECON 2470	Microeconomic Theory and Its Applications 1	3
STAT 1000	Basic Statistical Analysis 1	3
STAT 2000	Basic Statistical Analysis 2	3
One course (three credit hours) from Restricted Electives		3
Total credit hours		30

\*Recommended in second year only if not taken during University 1

**Third Year**

ABIZ 3080	Introduction to Econometrics	3
ABIZ 3510	Economics of Food Policy	3
ABIZ 3540	Financial Risk Management	3
HRIR 2440	Human Resource Management	3
Two courses (six credit hours) from Restricted Electives		6
Electives for Option and/or Free Electives		12
Total credit hours		30

**Fourth Year**

ABIZ 4500	Agribusiness Strategies Seminar	3
Restricted Elective, Electives for Option and/or Free Electives		27
Total credit hours		30

**4.1.4 Bachelor of Science (Agroecology)**

**Co-Chair:** G. Martens

**Office:** 364 Ellis Building

**Telephone:** (204) 474-9155

**Program Advisor:** M. Entz

**Office:** 309 Agriculture Building

**Telephone:** (204) 474-6077

The Agroecology program, which students enter after completing University 1, provides students with an understanding of the natural processes in the agroecosystem and the impact of agricultural practices on these processes. The program emphasizes three areas: ecological sciences, agricultural production, and the social and economic implications of environmental management.



Students will develop an understanding of how to manage natural and agricultural resources in a manner that enhances economic production while maintaining the integrity of natural and agricultural environments. An undergraduate research project is completed during third and fourth years as part of AGEC 3510 and AGEC 4550. Graduates are prepared for careers at the technical and management levels in government and non-government agencies involved in planning and management of natural and agricultural resources. By appropriate choice of free elective courses, students can prepare for graduate studies.

In addition to the courses prescribed in the faculty core for all students in the Faculty of Agricultural and Food Sciences, the following courses are prescribed for students in the program leading to the B.Sc. Agroecology.

**B.Sc. Agroecology Degree Core**

Course No.		Credit Hours
ABIZ 2390 (ECON 2390)	Introduction to Environmental Economics	3
AGEC 2370	Principles of Ecology	3
(BIOL 2300)		
AGEC 3510	Agroecology	3
AGEC 4510	Applications in Agroecology	3
AGEC 4550	Project in Agroecology	6
ANSC 2500	Animal Production	3
BIOL 3312	Community Ecology	3
CHEM 2770	Elements of Biochemistry 1	3
(MBIO 2770)		
PLNT 2500	Crop Production	3
PLNT 2520	Genetics	3
SOIL 3600	Soils and Landscapes in Our Environment	3
Total credit hours		36

**Restricted Electives**

**Group 1 – Agricultural Science**

**Three courses (nine credit hours) of the following:**

From any 2000, 3000 or 4000 level course from -

ANSC (Animal Science)

or

ENTM (Entomology)

or

PLNT (Plant Science)

9

**Group 2- Land Science**

**Six credit hours of the following:**

From any 3000 or 4000 level course from -

SOIL (Soil Science)

or

GEOG 2250 Introduction to Geographic Information Systems

6

**Group 3 – Policy and Economics**

**One course (three credit hours) of the following:**



From any 3000 or 4000 level course from -  
ABIZ (Agribusiness) 3  
Free Electives

27

**Suggested Progression of Program:**

**Second Year**

CHEM2770	Elements of Biochemistry 1	3
(MBIO2770)		
STAT 1000	Basic Statistical Analysis 1	3
ANSC 2500	Animal Production	3
PLNT 2500	Crop Production	3
ABIZ 1000	Introduction to Agribusiness Management	3
AGRI 2030	Technical Communications	3
AGEC 2370	Principles of Ecology	3

(BIOL 2300)		
PLNT 2520	Genetics	3
	Restricted Electives	6
Total credit hours		30

BIOL 3312	Community Ecology	3
SOIL 3600	Soils and Landscapes in Our Environment	3
ABIZ 2390 (ECON 2390)	Introduction to Environmental Economics	3
AGEC 3510	Agroecology	3
	Restricted and/or Free Electives	18
Total credit hours		30

**Fourth Year**

AGEC 4510	Applications in Agroecology	3
AGEC 4550	Project in Agroecology	6
	Restricted and/or Free Electives	21
Total credit hours		30

**NOTES:**

\* ENTM 2050 Introductory Entomology is a prerequisite for most courses in entomology. Students contemplating additional entomology courses as free electives are advised to take ENTM 2050 in second year.

**4.1.5 Bachelor of Science (Food Science)**

**Program Advisor:** A. Hydamaka

**Office:** 234 Ellis Building

**Telephone:** (204) 474-9642

The B.Sc. degree program in Food Science, which students enter into after completing University 1, provides the academic foundation of knowledge and skills for the wide range of activities in food science and technology. The degree program is structured in course offerings and content to enhance the competence of graduating students by providing greater emphasis in communications, critical thinking, computer literacy and statistics which are basic requirements of a modern professional environment. The B.Sc. degree program in Food Science is accredited by the Institute of Food Technologists (IFT).

The B.Sc. (Food Science) degree program offers two options: A Science Option and a Business Option. Students will elect one of two options of study. Both Food Science options require students to complete the Faculty Core courses. A description of each program and their requirements follows after the B.Sc. Food Science Degree Core.

**B.Sc. Food Science Degree Core**

Course No.		Credit Hours
CHEM 2770	Elements of Biochemistry 1	3
(MBIO 2770)		
FOOD 2500	Food Chemistry	3
FOOD 3010	Food Process 1	3
FOOD 4120	Food Science Seminar	3
FOOD 4150	Food Microbiology 1	3



FOOD 4160	Food Analysis 1	3
FOOD 4200	Quality Control	3
FOOD 4510	Food Product Development	3
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
MATH 1500	Introduction to Calculus	
or		
MATH 1520	Introduction to Calculus for Management and Social Sciences	
		3
STAT 2000	Basic Statistical Analysis 2	3
Total credit hours		33

### Food Science – Science Option

The principal areas covered are food processing, chemistry, analysis and safety. The Food Science program specifies ten required and a minimum of three restricted elective courses in Food Science. As well, students must select a minimum of three credit hours from a prescribed list of courses in critical thinking and ethics. Twenty-one credit hours of free electives are available and can be selected in Food Science. This will ensure a strong academic base in Food Science and accommodate a satisfactory level of Food Science specialization.

In addition to the courses required for the faculty core and the Food Science Degree Core the following courses are prescribed for the program leading to a B.Sc. in Food Science – Science Option.

### Food Science – Science Option Core

Course No.		Credit Hours
BIOE 3530	Engineering Fundamentals	3
CHEM 1310	University 1 Chemistry – An Introduction to Physical Chemistry*	3
CHEM 1320	University 1 Chemistry – Introduction to Organic Chemistry*	3
FOOD 3210	Food Engineering Fundamentals	3
FOOD 4010	Food Process 2	3
FOOD 4250	Food Analysis 2	3
MBIO 1010	Microbiology 1	3
MKT 2210	Fundamentals of Marketing	3
Total Credit Hours*		21

\*Both CHEM 1310 and CHEM 1320 are required for the Food Science-Science Option program. One of these courses will be credited as part of the Faculty Core.

### Restricted Electives

#### Group 1 – Food Safety

One course (three credit hours) from the following:

AGRI 2190 Toxicology Principles (1.5)  
and

ANSC 2530 Nutritional Toxicology (1.5)

FOOD 1000 Food Safety, Today and Tomorrow (3)

FOOD 4310 Introduction to HACCP (3)

FOOD 4500 Food Safety and Regulations (3)

3

#### Group 2 - General

Two courses (six credit hours) from the following:

FOOD 3160 Frozen Dairy Products (3)

FOOD 3170 Cheese and Fermented Milk Products (3)

FOOD 3220 Grains for Food and Beverage (3)

FOOD 3500 Processing of Animal Food Products (3)

FOOD 4230 Food Research (3)

FOOD 4260 Water Management in Food Processing (3)

FOOD 4540 Functional Foods and Nutraceuticals (3)

HNSC 4270 Sensory Evaluation (3)

6

Food Science – Science Option Free Electives

21



**Suggested Progression of Program:**

**Second Year**

Course No.		Credit Hours
CHEM 1310	University 1 Chemistry: Introduction to Physical Chemistry** or	3
CHEM 1320	University 1 Chemistry: Introduction to Organic Chemistry**	
CHEM 2770 (MBIO 2770)	Elements of Biochemistry 1	3
STAT 1000	Basic Statistical Analysis 1	3
STAT 2000	Basic Statistical Analysis 2	3
MBIO 1010	Microbiology 1	3
AGRI 2030	Technical Communications	3
FOOD 2500	Food Chemistry	3
	Restricted/and or Free Electives:	9
Total credit hours		30
<b>Third Year</b>		
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
BIOE 3530	Engineering Fundamentals	3
FOOD 3210	Food Engineering Fundamentals	3
FOOD 3010	Food Process 1	3
FOOD 4150	Food Microbiology 1	3
FOOD 4160	Food Analysis 1	3
FOOD 4250	Food Analysis 2	
MKT 2210	Fundamentals of Marketing	3
	Restricted and/or Free Electives:	6
Total credit hours		30
<b>Fourth Year</b>		
FOOD 4010	Food Process 2	3
FOOD 4120	Food Science Seminar	3
FOOD 4200	Quality Control in Foods	3
FOOD 4510	Food Product Development	3
	Restricted and/or Free Electives:	18
Total credit hours		30

\*\*While both CHEM 1310 and CHEM 1320 are required for the Food Science-Science Option program, normally only one is taken in second year.

**Food Science – Business Option**

The B.Sc. degree Program in Food Science now offers a Business option which now allows students to specialize in the program. The Business option specifies eight required courses and a minimum of one course from selected groups of Food Science courses plus one course from a selected group of philosophy courses. Additional required courses from Agribusiness and The Faculty of Management provide a level of specialization in economics, finance, marketing and management. There are also twenty-one credit hours (seven courses) available for free electives.

In addition to the courses required for the faculty core and the Food Science Degree Core the following courses are prescribed for the program leading to a B.Sc. in Food Science – Business Option.

**Food Science – Business Option Core**

Course No.		Credit Hours
ABIZ 3510	Economics of Food Policy	3
ACC 1100	Introductory Financial Accounting	3
ECON 2450	Microeconomic Theory and Its Applications 1	3
ECON 2470	Macroeconomic Theory and Its Applications 1	3
FOOD 4500	Food Safety and Regulations	3
HRIR 2440	Human Resource Management	3
Total Credit Hours		18

**Restricted Electives**

**Group 1 - Marketing**

**Two courses (six credit hours) from the following:**

ABIZ 2510	Introduction to Agricultural and Food Marketing (3)
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ABIZ 3520	Food Distribution and International Marketing (3)	
MKT 2210	Fundamentals of Marketing (3)	6

**Group 2 - General**

One courses (three credit hours) from the following:

AGRI 2190	Toxicology Principles (1.5)	
and		
ANSC 2530	Nutritional Toxicology (1.5)	
FOOD 1000	Food Safety, Today and Tomorrow (3)	
FOOD 3160	Frozen Dairy Products (3)	
FOOD 3170	Cheese and Fermented Milk Products (3)	
FOOD 3220	Grains for Food and Beverage (3)	
FOOD 3500	Processing of Animal Food Products (3)	
FOOD 4250	Food Analysis (3)	
FOOD 4260	Water Management in Food Processing (3)	
FOOD 4310	Introduction to HACCP (3)	
FOOD 4540	Functional Foods and Nutraceuticals (3)	3
Free Electives		21

**Suggested Progression of Program:**

**Second Year**

Course No.		Credit Hours
ACC 1100	Introductory Financial Accounting	3
CHEM 2770 (MBIO 2770)	Elements of Biochemistry 1	3
STAT 1000	Basic Statistical Analysis 1	3
STAT 2000	Basic Statistical Analysis 2	3
ABIZ 1000	Introduction to Agribusiness Management	3
AGRI 2030	Technical Communications	3
FOOD 2500	Food Chemistry	3
HRIR 2440	Human Resource Management	3
	Restricted/and or Free Electives:	6
Total credit hours		30

**Third Year**

HNSC 1210	Nutrition for Health and Changing Lifestyles	3
ECON 2450	Microeconomic Theory and Its Applications 1	3
ECON 2470	Macroeconomic Theory and Its Applications 1	3
FOOD 3010	Food Process 1	3
FOOD 4150	Food Microbiology 1	3
FOOD 4160	Food Analysis 1	3
	Restricted and/or Free Electives:	12
Total credit hours		30

**Fourth Year**

ABIZ 3510	Economics of Food Policy	3
FOOD 4120	Food Science Seminar	3
FOOD 4200	Quality Control in Foods	3
FOOD 4500	Food Safety and Regulations	3
FOOD 4510	Food Product Development	3
	Restricted and/or Free Electives:	15
Total credit hours		30

**4.1.6 Biosystems Engineering,**

**Head:** D. Mann

**Office:** E2-376 EITC (Engineering Building)

**Telephone:** (204) 474-6033

Students in the Bachelor of Science degree in [Biosystems Engineering must be admitted to the Faculty of Engineering](#). The Biosystems Engineering program is outlined in the Faculty of Engineering chapter of this *Calendar*. The courses below are for students studying in the various majors in Agricultural and Food Sciences and for non-Agriculture students with a special interest in the subjects.

Course No.		Credit Hours
BIOE 2090	Machinery for Agricultural Production	4
BIOE 3200	Environmental Engineering for Non-Engineers	3



BIOE 3530	Engineering Fundamentals	3
BIOE 4500	Water Management	3
BIOE 4510	Agricultural Waste Management	3
BIOE 4520	Crop Preservation and Handling	3

#### 4.2 Pre-Veterinary Program

A pre-veterinary program is offered to students who plan to take the degree Doctor of Veterinary Medicine. Pre-veterinary students whose academic standing is acceptable may be admitted to the Western College of Veterinary Medicine (WCVM), University of Saskatchewan. Acceptance into the Western College of Veterinary Medicine from the pre-veterinary program at the University of Manitoba is normally restricted to residents of Manitoba. Students from outside Manitoba may be accepted as residents of their own province or country. Students entering the pre-veterinary program are responsible for establishing their residence status.

#### Western College of Veterinary Medicine, Saskatoon

Two full years of university training are required for admission comprised of 30 hours from University 1 and 30 hours in the Faculty of Agricultural and Food Sciences, during which credit must be secured in the number of courses considered a standard load in the curriculum in which they are obtained. The deadline for applications is December.

The program of Pre-Veterinary study must include six (6) credit hours of: English\*, three (3) credit hours in Physics, Biochemistry, Microbiology, six (6) credit hours of Mathematics or Statistics; nine (9) credit hours in Biology or Zoology (including *three (3) credit hours in genetics*), Chemistry (including *three (3) credit hours in organic chemistry*); plus electives sufficient to complete two full years. (\*This requirement can also be met by taking AGRI 2030 Technical Communications, and one half course in philosophy.)

The following program is designed to meet the above requirements within the constraints of present course offerings. Some modifications may be possible.

#### First Year/University 1

Course No.		Credit Hours
CHEM 1300	University 1 Chemistry: Structure and Modelling in Chemistry	3
CHEM 1320	University 1 Chemistry: An Introduction to Organic Chemistry	3
MATH 1300	Vector Geometry and Linear Algebra	6
	Or	
MATH 1310	Matrices for Management and Social Sciences	
	Or	
MATH 1500	Introduction to Calculus	
	Or	
MATH 1520	Introductory Calculus for Management and Social Sciences	
AGRI 1500	Natural Resources and Primary Agricultural Production	3
AGRI 1510	Production, Distribution and Utilization of Agricultural Products	3
BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, function and Interactions	3
ENGL 1200*	Representative Literary Works (6)	6
	Or	
ENGL 1300*	Literature Since 1900 (6)	
<b>Total credit hours</b>		<b>30</b>

**NOTE:** \* In place of ENGL 1200 or ENGL 1300, Technical Communications (AGRI 2030) may be taken in second year; and one of the following Philosophy courses: PHIL 1290, PHIL 2740, PHIL 2750, PHIL 2830.

#### Second Year

CHEM 1310	University 1 Chemistry: An Introduction to Physical Chemistry	3
CHEM 2770 (MBIO 2770)	Elements of Biochemistry 1	3
CHEM 2780 (MBIO 2780)	Elements of Biochemistry 2	3
PHYS 1020	General Physics 1	3
STAT 1000	Basic Statistical Analysis	3
PLNT 2520 (BIOL 2500)	Genetics	3
MBIO 1010	Microbiology 1	3
	Electives	9
<b>Total credit hours</b>		<b>30</b>

**Please note:**



The courses outlined here relate to the entrance requirements for WCVM. Students intending to apply to the Ontario Veterinary College (OVC) should consult an OVC advisor or the Animal Systems Advisor.

#### **4.3 Minors**

As part of the electives portion of their programs, students may declare and complete a Minor from departments in which a Minor is offered. Course requirements are outlined in sections below. Minors are also available in the [Faculties of Arts, Environment, Human Ecology, and Science](#) and can be found within the departmental sections of each of these faculties. A Management Minor is offered by the [Asper School of Business](#); Agriculture, Agroecology and Food Science students may complete this minor (this minor is not available to Agribusiness students). The Minor consists of 18 credit hours of Management courses. Students must meet prerequisites for all courses. Completion of a Minor is optional. It should be noted that planning for completion of a Minor should be done early in the program, ideally before 90 credit hours have been completed, due to restricted opportunities for courses later in the program. All 2<sup>nd</sup> program majors must be declared before 75 credit hours of study have been completed.

#### **Minors in the Faculty of Agricultural and Food Sciences**

##### **Animal Systems**

Students may obtain a minor in Animal Systems (18 credit hours) by completing ANSC 2500 Animal Production plus an additional 15 credit hours in Animal Science courses.

##### **Entomology**

Students may obtain a minor in Entomology (18 credit hours) by completing ENTM 2050 Introductory Entomology plus an additional 15 credit hours from the following list of courses: ENTM 1000 World of Bugs, ENTM 3160 Veterinary and Wildlife Entomology, ENTM 3170 Crop Protection Entomology, ENTM 3162 Manitoba's Insect Fauna, ENTM 4000 Topics in Entomology; ENTM 4280 Aquatic Entomology, ENTM 4320 Pollination Biology, ENTM 4500 Insect Taxonomy and Morphology, ENTM 4520 Physiological Ecology of Insects. Many courses are offered in alternating years, so students should consult the Department Head of Entomology to plan their program.

##### **Food Science**

Students may obtain a minor in Food Science (18 credit hours) by completing FOOD 1000 Food Safety Today and Tomorrow and FOOD 2500 Food Chemistry plus an additional 12 credit hours in FOOD courses excluding FOOD 4230 Food Research and FOOD 4120 Food Science Seminar.

##### **Plant Biotechnology**

Students may obtain a minor in Plant Biotechnology (18 credit hours) by completing PLNT 2530 Plant Biotechnology plus an additional 15 credit hours from the following list of courses: PLNT 3140 Introductory Cytogenetics, PLNT 3520 Principles of Plant Improvement, PLNT 3570 Fundamentals of Plant Pathology, PLNT 4330 Intermediate Plant Genetics, PLNT 4310 Introductory Plant Genomics, PLNT 4550 Developmental Plant Biology, PLNT 4560 Secondary Plant Metabolism, PLNT 4570 Research Methods in Plant Pathology, PLNT 4580 Molecular Plant-Microbe Interactions, PLNT 4590 Physiology of Crop Plants, PLNT 4600 Issues in Agricultural Biotechnology, PLNT 4610 Bioinformatics.

##### **Soil Science**

Students may obtain a minor in Soil Science (18 credit hours) by completing SOIL 3600 Soils and Landscapes in our Environment plus an additional 15 credit hours from the following list of courses: SOIL 3060 Introduction to Agrometeorology, SOIL 3520 Pesticides: Environment, Economics and Ethics, SOIL 3160 Field Methods in Land Resource Science, SOIL 4060 Physical Properties of Soils, SOIL 4130 Soil Chemistry and Mineralogy, SOIL 4400 Soil Ecology, SOIL 4500 Remediation of Contaminated Land, SOIL 4510 Soil and Water Management, SOIL 4520 Soil Fertility, SOIL 4530 Land Use and Environment.



#### 4.4 Diploma in Agriculture

**Director:** Michele Rogalsky

##### School of Agriculture

**Office:** 160 Agriculture Building

**Telephone:** (204) 474-9295

The core curriculum of prescribed courses, common to all students, provides a broad yet integrated education in the production, management and marketing of agricultural products and the principles of managing a business. Students are taught to use this knowledge to evaluate the technical and economic feasibility of a variety of alternative agricultural practices.

Within the program, students are able to specialize in areas of interest. Options are available in Business Management, Crop Management, Livestock Management and General Agriculture. These options are chosen by the student during the first term, first year.

##### Prescribed Courses for all Students in these options

###### First Year, Fall Term

Course No.		Credit Hours
BIOE 0600	Farm Machinery	4
ANSC 0420	Animal Biology and Nutrition	4
ABIZ 0440	Agricultural Economics and Marketing 1	4
ABIZ 0460	Financial Management 1	4
DAGR 0410	Communication and Learning Skills	4
DAGR 0420	Introduction to Soils and Crops	4
DAGR 0680	Management Planning Project 1	4
Total credit hours		24

###### First Year, Spring Term

PLNT 0410	Cereal and Oilseed Production Practices	4
SOIL 0420	Soil Productivity and Land Use	4
ABIZ 0470	Financial Management 2	4
DAGR 0680	Management Planning Project 1 <sup>1</sup>	3
Total credit hours		15

+ 3 courses, according to option\*

<sup>1</sup>continuation of course from fall term

###### Second Year

ABIZ 0450	Agricultural Economics and Marketing 2	4
ENTM 0620	Pest Management and Farm Insects	4
DAGR 0690	Management Planning Project 2	5
Total credit hours		13

+ courses, according to option\*

Total credit hours for prescribed courses 52

Total credit hours for prescribed courses for option 18-24

Total credit hours of free electives 17-23

**Total credit hours for Agriculture Diploma 93**

##### NOTE:

\*These additional courses will consist of those required within an option plus free electives, in accordance with the four options described below:

##### Options

In order to accommodate a modest level of specialization, the students will be required to elect one of four options by the end of first term, first year. Each of these four options has a series of required courses. However, within each option there are also unrestricted electives available to the student who wishes to blend training available in two or more option areas to increase the degree of specialization.

##### Business Management Option

This option offers a more in-depth education in business management to those people who intend to manage farms or work as employees, managers and/or business owners in the agricultural service sector (agricultural lending, fertilizer, feed and chemical sales, etc.).

##### Prescribed Courses for Business Management Option

Course No.		Credit Hours
ABIZ 0680	Agribusiness Management	4



ABIZ 0690	Agricultural Finance and Credit*	4
ABIZ 0720	Farm Business Management	4
Plus at least one of the following:		
ABIZ 0700	Merchandising and Sales	3
ABIZ 0710	Agricultural Policy	3
ABIZ 0730	Financial Risk Management	3
Plus one Biosystems Engineering course:		
BIOE 0400	Farm Power	4
BIOE 0710	Materials Handling and Electrical Controls	3
BIOE 0690	Water Management	4
BIOE 0700	Agricultural Buildings and Environments	4
Total prescribed credit hours, within option.		18-19

Plus 22-23 credit hours of electives, to complete 93 credit hours within the program.

\*For 2012-2013 and 2013-2014 students are to substitute course DAGR 0730 Case Studies and Institutional Lending 1.

### Crop Management Option

This option emphasizes soil and crop management. It is designed for people who plan to manage farms where crops are the primary farm enterprise or for those who are interested in careers in industries or businesses that provide services to these types of farms (e.g. crop supply businesses).

#### Prescribed Courses for Crop Management Option

Course No.		Credit Hours
PLNT 0770	Weed Management	4
PLNT 0780	Plant Disease Management	4
SOIL 0620	Soil Conservation and Management	4
SOIL 0630	Soil Fertility	4
Plus at least one of the following:		
PLNT 0750	Forage and Pasture Management	4
PLNT 0760	Special Crops	4
PLNT 0800	Diversification With Horticultural Crops	4
PLNT 0820	Organic Crop Production on the Prairies	3
Plus one Biosystems Engineering course:		
BIOE 0400	Farm Power	4
BIOE 0710	Materials Handling and Electrical Controls	3
BIOE 0690	Water Management	4
Total prescribed credit hours, within option		22-24

Plus 17-19 credit hours of electives, to complete 93 credit hours in the program.

### Livestock Management Option

This option emphasizes the principles of livestock production, with some degree of specialized attention to beef, dairy, swine, poultry or horse production. It is designed for people who plan to manage farms where livestock production is the primary enterprise or for those who are interested in the agricultural service industries that support livestock production (e.g. feed suppliers).

#### Prescribed Courses for Livestock Management Option

Course No.		Credit Hours
ANSC 0600	Animal Health and Welfare	3
PLNT 0750	Forage and Pasture Management	4
Plus at least one of the following:		
ANSC 0670	Beef Cattle Production and Management	4
ANSC 0680	Dairy Cattle Production and Management	4
Plus at least one of the following:		
ANSC 0690	Swine Production and Management	4
ANSC 0700	Poultry Production and Management	4
ANSC 0730	Horse Production and Management	3
Plus one Biosystems Engineering course:		
BIOE 0710	Materials Handling and Electrical Controls	3
BIOE 0700	Agricultural Buildings and Environments	4
Total prescribed credit hours, within option		17-19

Plus 22-24 credit hours of electives to complete 93 credit hours in the program.



### General Agriculture Option

This option exposes the student to crop and livestock production, business management and biosystems engineering beyond the exposure contained in the core curriculum. It is designed for those people who intend to manage diversified farm operations and for those who desire a general education in applied agricultural science.

#### Prescribed Courses for General Agriculture Option

Course No.		Credit Hours
At least one of the following:		
ANSC 0670	Beef Cattle Production and Management	4
ANSC 0680	Dairy Cattle Production and Management	4
ANSC 0690	Swine Production and Management	4
ANSC 0700	Poultry Production and Management	4
ANSC 0730	Horse Production and Management	3
Plus at least one of the following:		
PLNT 0750	Forage and Pasture Management	4
PLNT 0760	Special Crops	4
PLNT 0800	Diversification with Horticultural Crops	4
PLNT 0820	Organic Crop Production on the Prairies	3
Plus at least one of the following:		
SOIL 0620	Soil Conservation and Management	4
SOIL 0630	Soil Fertility	4
Plus at least one of the following:		
ABIZ 0680	Agribusiness Management	4
ABIZ 0720	Farm Business Management	4
Plus one Biosystems Engineering course:		
BIOE 0400	Farm Power	4
BIOE 0710	Materials Handling and Electrical Controls	3
BIOE 0690	Water Management	4
BIOE 0700	Agricultural Buildings and Environments	4
Total prescribed credit hours, within option		17-20
Plus 21-24 credit hours of electives, to complete 93 credit hours in the program.		

#### 4.5 Cooperative Education Program

**Cooperative Education/Job Placement Officer:** Laura Lazo

**Office:** 160 Agriculture Building

**Telephone:** (204) 474-6943

Cooperative Education is a process of learning, which formally integrates the student's academic study with work experience in employer organizations. Work-related experience is found in industry, government and the farming profession. The work terms provide the students with practical experience, help to finance their education and provide guidance for further career specialization. All regulations governing regular Faculty of Agricultural and Food Sciences degree and diploma programs apply to the Cooperative Education Program.

#### Academic Term Requirements

Once having been accepted into the Cooperative Education program there are three requirements for completion of the Work Term(s). Failure to do any of them in a timely fashion will result in a failing grade. Please note the Degree Program requires three four month work terms and the Diploma Program requires one five month Work Term. Please see each program's "Employment Term Requirements" for details.

Part way through the work term, the Cooperative Education Coordinator will contact the student for a work site evaluation. During the evaluation both the student and employer will be interviewed and the work assessed. The student will need to make him/herself available for the interview.

Two weeks after the end of the work term, a work term report is due and must be submitted to the Cooperative Education Coordinator. Both content and format will be marked. (Details as to format and what is required in the report can be found in "Guidelines for Cooperative Education Work Term Report" which can be obtained from the Cooperative Education Coordinator.)

Also, two weeks after the end of the work term, a post employment review is required to be submitted to the Cooperative Education Coordinator.



For Degree, the appropriate department head, in consultation with the student's program chair, will assign each participating student a faculty advisor. For Diploma, the Director of the School of Agriculture, in consultation with the Academic Advisor, will assign each participating student a faculty advisor. The faculty advisor will be responsible for evaluating the student's work term report and assigning the student a grade based on the report, the employer's evaluation and Cooperative Education Coordinator's site evaluation. Grades of "Pass" or "Fail" will be assigned. Students successfully completing the work term(s) will have their "Cooperative Education Option" acknowledged on their graduation parchment.

### Degree Program

**Admission:** To be considered for admission in the Cooperative Education Program, an undergraduate degree student must have a minimum GPA of 2.5, have completed at least 75 credit hours of study by the end of the academic year of application but still need to complete 21 credit hours in their last year of academic study.

Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Education Program. Acceptance into the program is dependant upon the student receiving a job placement through the Cooperative Education Office.

**Employment Term Requirements:** The Cooperative Education Program is a five year program in which 12 months are spent in three-four month work terms with a faculty approved employer. The student will receive three credits for completing the Cooperative Education Program (one credit for each completed term). Students are required to register in the appropriate employment term course and pay the fee prior to starting the employment term. Normally each employment term will be completed with a different employer. While on a work term, a cooperative education student is not permitted to take more than six hours of academic credit and may not take more than one course at a time.

### Diploma Program

**Admission:** To be considered for admission in the Cooperative Education Program, a first year diploma student must have a minimum GPA of 2.5, and have completed at least 47 credit hour of studies by the end of the academic year of application.

Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Education Program. Acceptance into the program is dependant upon the student receiving a job placement through the Cooperative Education Office.

**Employment Term Requirements:** The Cooperative Education Program is a five month program between the first and second year with a faculty-approved employer. The student will receive two credits for completing the Cooperative Education Program. Students are required to register in the employment term course and pay the fee prior to starting the employment term.

## SECTION 5: Course Descriptions

### 5.1.1 Agribusiness -ABIZ 0 Level

**ABIZ 0440** Agricultural Economics & Marketing 1 Cr.Hrs.4 (Formerly 061.044) Introduction to key economic concepts and business principles and their application to Canadian agribusiness.

**ABIZ 0450** Agricultural Economics & Marketing 2 Cr.Hrs.4 (Formerly 061.045) The application of economic analysis in the study of marketing: concepts, policy, practices and institutions. Prerequisite: ABIZ 0440 (or 061.044).

**ABIZ 0460** Financial Management 1 Cr.Hrs.4 (Formerly 061.046) Study of accounting principles and financial information for the preparation and presentation of financial statements to facilitate the management of farms and agricultural businesses.

**ABIZ 0470** Financial Management 2 Cr.Hrs.4 (Formerly 061.047) Study of analysis of financial statements and financial information by decision makers managing the finances of farms and agricultural businesses. Prerequisite:

ABIZ 0460 (or 061.046).

**ABIZ 0680** Agribusiness Management Cr.Hrs.4 (Formerly 061.068) The application of economic, accounting and management principles to organizing, operating and managing an agribusiness

**ABIZ 0690** Agricultural Finance and Credit Cr.Hrs.4 (Formerly 061.069) Application of financial management concepts in evaluating investment options and risk in farm and agribusiness decision-making. Prerequisite: ABIZ 0460 (or 061.046).

**ABIZ 0700** Merchandising and Sales Cr.Hrs.3 (Formerly 061.070) Analyzing food consumption, farm input usage and marketing trends and translating these into effective selling and distribution programs. Examination of the selling function and sales management.

**ABIZ 0710** Agricultural Policy Cr.Hrs.3 (Formerly 061.071) Review of agriculture, international trade and food safety policies affecting the production and distribution of agricultural commodities and food products.



**ABIZ 0720** Farm Business Management Cr.Hrs.4  
(Formerly 061.072) Application of decision making principles in terms of farm production, finance, and marketing. Prerequisites ABIZ 0470 (or 061.047).

**ABIZ 0730** Financial Risk Management Cr.Hrs.3  
(Formerly 061.073) Various approaches to managing market risk will be studied. This includes forward pricing, hedging and options along with insurance, diversification and technology to manage production risk. Prerequisites: ABIZ 0470 (or 061.047) or 061.047); or Pre- or Corequisite: ABIZ 0450 (061.045).

**ABIZ 0740** Special Topics in Business Management Cr.Hrs.3  
(Formerly 061.074) Selected topics of current interest in Business Management. Prerequisite: written consent of Director of the School of Agriculture.

### 5.1.1 Agribusiness and Agricultural

#### Economics-ABIZ 1000 Level

**ABIZ 1000** Introduction to Agribusiness Management Cr.Hrs.3  
(Formerly 061.100) Introduction to management principles applied to agribusiness. Topics covered will include cooperative and corporate organizations, financial analysis, marketing and planning. All students will prepare a business plan. Students will use spreadsheet skills with respect to processing information and preparing forecasts. Not to be held with the former 061.100 or 061.250.

**ABIZ 1010** Economics of World Food Issues and Policies Cr.Hrs.3  
(Formerly 061.101) Determinants of global food consumption, production and the factors underpinning food security and malnutrition. The importance of international trade in balancing countries' supply and demand for food, examination of trade barriers and institutions facilitating trade. Not to be held with the former 061.210.

### 5.1.1 Agribusiness and Agricultural

#### Economics-ABIZ 2000 Level

**ABIZ 2120** World Agribusiness Study Tour Cr.Hrs.3  
(Formerly 061.212) Provides an understanding of world agribusiness, including areas such as agri-marketing, agricultural trade, agri-finance, agricultural policy, risk management, and economics of the environment and resources through an international study trip. A particular region of the world will be visited each time the course is offered. Offered at the discretion of the Department of Agribusiness. Prerequisite: Approval of instructor.

**ABIZ 2210** Transportation Principles Cr.Hrs.3  
(Formerly 061.221) Demand forecasting, cost analysis, regulation of carriers, role of transport in economic development, project appraisal, and transport planning. Not to be held with the former 061.351 or 018.354. Also offered as SCM 2210 by the Department of Supply Chain Management.

**ABIZ 2390** Introduction to Environmental Economics Cr.Hrs.3

(Formerly 061.239) Economics of management of water, air and land resources quality, and conservation. Economic implications of current issues in environmental standards, licensing criteria and pollution charges. Also offered as ECON 2390 by the Department of Economics. Students may not hold credit for both ABIZ 2390 and ECON 2390 (or 018.239) Prerequisite: ECON 1010 and ECON 1020 or the former ECON 1200 (or 018.120).

**ABIZ 2510** Introduction to Agricultural and Food Marketing Cr.Hrs.3  
(Formerly 061.251) Economic principles and institutions involved in the Canadian agricultural and food marketing system. Farm and Agribusiness applications. Pre or co requisite: ECON 1010 and ECON 1020 or the former ECON 1200 (or 018.120).

**ABIZ 2520** Introduction to Management Sciences Cr.Hrs.3  
(Formerly 061.252) An introduction to management science techniques and models. Topics include linear programming, distribution problems, decision theory and queuing models. Students may not hold credit for ABIZ 2520 and SCM 2150 (or 164.215 or 027.215) or 061.414. Prerequisites: MATH 1680 (or 136.168), or MATH 1300 (or 136.130 or 136.131) and MATH 1500 (or 136.150 or 136.152). Pre-Co requisite STAT 1000 (or 005.100) or equivalent.

### 5.1.1 Agribusiness and Agricultural

#### Economics-ABIZ 3000 Level

**ABIZ 3080** Introduction to Econometrics Cr.Hrs.3  
(Formerly 061.308) The application of statistical tools, especially regression analysis for estimating economic relationships and testing economic hypotheses through the use of spreadsheets and data sets. Students may not hold credit for both ABIZ 3080 and the former 018.344. Prerequisite: STAT 2000 (or 005.200) or equivalent, or a grade of "C" in ECON 3170 (or 018.317) and ECON 1010 and ECON 1020 or the former ECON 1200. Also offered as ECON 3180 by the Department of Economics.

**ABIZ 3120** Commodity Futures Markets Cr.Hrs.3  
(Formerly 061.312) Theory and economic functions of commodity markets including futures and options markets. The roles of the various participants; the determination of inter-temporal prices and various aspects of hedging will be studied. Prerequisites: ECON 1010 and ECON 1020 or the former ECON 1200 (or 018.120) and STAT 2000 (or 005.200)

**ABIZ 3500** Agricultural and Food Policy Cr.Hrs.3  
(Formerly 061.350) Economics of market intervention; trade policy analysis, and agricultural protection, exports, subsidies, tariffs, quotas; intermediate versus final goods; currency exchange rates and agricultural trade policy; trade agreements. Not to be held with the former 061.418. Prerequisites: ECON 2450 (or 018.245) and ECON 2470 (or 018.247).

**ABIZ 3510** Agricultural Economics Cr.Hrs.3  
Economics of market intervention; trade policy analysis, and agricultural protection, exports, subsidies, tariffs, quotas; intermediate versus final goods; currency exchange rates and agricultural trade policy; trade agreements. Not to be held with 061.350, 061.418 or ABIZ 3500. Prerequisites:



ECON 2450 (or 018.245) and ECON 2470 (or 018.247).

**ABIZ 3520** Food Distribution and International Merchandising (3-0:0-0) Cr.Hrs.3 (Formerly 061.352) An introduction to management concepts and their application to domestic and international merchandising. Prerequisites: (ABIZ 1000 (or 061.100) or 061.250), and (ABIZ 2510 (or 061.251) or MKT 2210 (or 118.221)).

**ABIZ 3530** Farm Management Cr.Hrs.3 (Formerly 061.353) Management decisions and business planning as they relate to farm production, marketing and financing activities. Identifying potential markets; comparative advantage analysis; organizational form and contractual requirements; alternative marketing and production strategies; financing production and marketing activities; develop farm business plan. Prerequisite: ABIZ 1000 (or 061.100) or 061.250.

**ABIZ 3540** Financial Risk Management Cr.Hrs.3 (Formerly 061.354) Risk expected returns and valuation of capital; capital budgeting and dealing with risk; derivative securities and financial risk management; agricultural production and management of risk; agricultural risk management and public policy. Prerequisites: STAT 1000 (or 005.100) and ACC 1100 (or 009.110) and ABIZ 1000 (or 061.100) or 061.250 or ABIZ 2510 (or 061.251).

**ABIZ 3550** Environmental Policy Cr.Hrs.3 (Formerly 061.355) Environmental policy development and enactment in Canada; federal and provincial review processes; socio-political aspects of policy development; chemical and pesticide licensing procedures and environmental effects monitoring; environmental policy and sustainability; case studies; discussion of various policies; ethics of development, preservation and conservation; environmental risk management. Prerequisite: ABIZ 2390 (or 061.239) or ECON 2390 (or 018.239).

**ABIZ 3560** Agribusiness Portfolio Management Cr.Hrs.3 (Formerly 061.356) The application of portfolio management to agribusiness, including asset allocation, portfolio construction and analysis, and operation of investment instruments and capital markets. Includes Canadian Securities Course. Prerequisite: Major in Agribusiness or Accounting and/or Finance, with 60 credit hours, ACC 1100 (or 009.110) and ECON 1010 OR ECON 1020 or the former ECON 1200 (or 018.120), or permission from instructor. Recommended G.P.A. of 2.80 or higher.

### 5.1.1 Agribusiness and Agricultural Economics-ABIZ 4000 Level

**ABIZ 4120** Intermediate Econometrics Cr.Hrs.3 (Formerly 061.412) A course in applied econometrics that explores the regression model and how it may be applied. Special emphasis is placed on violations to the assumptions of least squares, specification error, and applying the model to production, marketing, forecasting and other applications. Prerequisite: Written consent of instructor; this course assumes students have had a sound background in economic theory (e.g. micro and macro), as well as single variable calculus, linear algebra, and basic statistics. ABIZ 3080 (or 061.308) or ECON 3180 (or 018.318) is highly recommended. Also offered as ECON 4120 by the

Department of Economics.

**ABIZ 4240** Agricultural Economics Special Project Cr.Hrs.3 (Formerly 061.424) Students will undertake a project to analyze an applied problem and present results in a research and/or extension paper. A list of relevant readings will be assigned. Permission of the Department Head required.

**ABIZ 4260** Price Analysis Cr.Hrs.3 Theory and methods of price analysis, commodity markets and the demand and supply factors that underpin seasonal, cyclical and secular changes in commodity prices. Prerequisites: ECON 2450 (or 018.245 or 018.270) and [ABIZ 3080 (or 061.308) or ECON 3180 (or 018.3180)]. Not to be held with ABIZ 4250 (formerly 061.425) or the former 061.404

**ABIZ 4500** Agribusiness Strategies Seminar Cr.Hrs.3 (Formerly 061.450) This course will provide participants with insights into management strategies and decision-making, as well as the responsibilities, tensions and pressures encountered by senior management. Some classes will include participation by senior management followed by a debriefing session. Students must have completed 90 credit hours towards a degree in Agribusiness, or permission of the Department.

### 5.1.2 Agriculture-AGRI 1000 Level

**AGRI 1500** Natural Resources and Primary Agricultural Production Cr.Hrs.3

(Formerly 065.150) Introduces students to natural resources and climate, primary production of crops and livestock, production and resource economics and rural society. A model of the entire agri-food system will be used to show interrelationships among disciplines, processes, etc.

**AGRI 1510** Production, Distribution and Utilization of Agricultural Products Cr.Hrs.3

(Formerly 065.151) Introduction to the aspects of agriculture that follow primary production and includes confined animal production and a presentation of a model of the entire agrifood system. Special emphasis on processing, marketing, transportation and food safety. Laboratory sessions will use small groups to examine problem based case studies.

### 5.1.2 Agriculture-AGRI 2000 Level

**AGRI 2030** Technical Communications Cr.Hrs.3

(Formerly 065.203) Lectures and workshops to develop written and oral communication skills for preparing and presenting scientific and technical reports. Basic composition skills, communication graphics and job interview techniques are included. Prerequisite: 24 credit hours of University.

**AGRI 2180** Introductory Toxicology Cr.Hrs.3

(Formerly 065.218) A survey of general principles underlying the effects of toxic substances on biological systems, including history, scope and applications of toxicology, the mechanisms of toxic action, and some major types of toxicants. Not to be held with BIOL 2380 formerly BOTN 2180 (or 001.218), BOTN 2190 (or 001.219), ENVR 2180 (or 128.218), ENVR 2190 (or 128.219), ZOOL 2180 (or



022.218), ZOO 2190 (or 022.219), and the former 001.337. Prerequisite: BIOL 1020 (C) and BIOL 1030 (C) or the former 071.125 (C) and CHEM 1310 (or 002.131 or 002.128) or CHEM 1320 (or 002.132).

**AGRI 2190** Toxicology Principles Cr.Hrs.1.5 (Formerly 065.219) A survey of general principles underlying the effects of toxic substances on biological systems, including the history, scope and applications of toxicology, the mechanisms of toxic action. Not to be held with BIOL 2380 or the former BOTN 2180 (or 001.218), BOTN 2190 (or 001.219), ENVR 2180 (or 128.218), ENVR 2190 (or 128.219), ZOO 2180 (or 022.218), ZOO 2190 (or 022.219), AGRI 2180 (or 065.218) and the former 001.337. Prerequisite: BIOL 1020 (C) and BIOL 1030 (C) or the former 071.125 (C) and CHEM 1310 (or 002.131 or 002.128) or CHEM 1320 (or 002.132).

**AGRI 2200** Principles of Plant and Animal Physiology for Engineers Cr.Hrs.4 (Formerly 065.220) Plant and animal physiology as affected by environment for use in the design of agricultural machines, structures and food processes for biological products; models of simulation of plant and animal growth. Prerequisite: BIOE 2590 (or 034.259) or the former 071.201.

### 5.1.2 Agriculture-AGRI 3000 Level

**AGRI 3000** Business Communication Cr.Hrs.3 The course helps students advance their writing and presentation skills to succeed in the agricultural workplace. Lectures, course materials, and exercises will address grammar, usage, citation, correspondence, résumés and cover letters, and job interview techniques. Prerequisite: Must be enrolled in the Internationally Educated Agrologists Program (IEAP).

**AGRI 3030** Modern Topics in Agriculture 1 Cr.Hrs.3 (Formerly 065.303) An interdisciplinary course including topical national and international issues in agriculture. The course will vary from year to year to provide material of current interest in a wide variety of subject areas. Student participation by means of seminars will be encouraged.

**AGRI 3040** Modern Topics in Agriculture 2 Cr.Hrs.3 (Formerly 065.304) Similar to AGRI 3030 (or 065.303).

### 5.1.2 Agriculture-AGRI 4000 Level

**AGRI 4000** Practising the Profession of Agrology 1 Cr.Hrs.3 Introduction to the profession of Agrology in Manitoba with an emphasis on understanding the structure of the agriculture industry, the agriculture network and how it functions. Laboratory sessions will focus on guest speakers and tours of companies and agencies in the agriculture industry. Prerequisite: Must be enrolled into the Internationally Educated Agrologists Program (IEAP).

**AGRI 4550** Agriculture Cooperative Education Work Term 1 Cr.Hrs.1 (Formerly 065.455) Special four-month work assignment in business, industry, government or research for cooperative education students. Requires submission of a written report covering the work completed during the four-month

professional assignment.

**AGRI 4560** Agriculture Cooperative Education Work Term 2 Cr.Hrs.1 (Formerly 065.456) Special four-month work assignment in business, industry, government or research for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment.

**AGRI 4570** Agriculture Cooperative Education Work Term 3 Cr.Hrs.1 (Formerly 065.457) Special four-month work assignment in business, industry, government or research for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment.

### 5.1.3 Agroecology-AGEC 2000 Level

**AGEC 2370** Principles of Ecology Cr.Hrs.3 (Formerly 065.237) Principles of ecology at the individual, population, community, and ecosystem levels. This course is also given in the Faculty of Science as BIOL 2300 (formerly BOTN 2370 or ZOO 2370). It is the normal prerequisite to other courses in ecology. Not to be held with BIOL 2390 (formerly BOTN 2280 or 001.228) or ZOO 2290 or BIOL 3260 (formerly BOTN 2291 or 022.229, or BOTN 3280 formerly BOTN 2370 or BOTN 2371 (or 001.237), or ZOO 2370 or ZOO 2371 (or 022.237). Prerequisite: A grade of "C" in BIOL 1020 or BIOL 1021 and BIOL 1030 or BIOL 1031 or the former 071.125. Pre- or co-requisite: STAT 1000 or STAT 1001.

### 5.1.3 Agroecology- AGEC 3000 Level

**AGEC 3510** Agroecology Cr.Hrs.3 (Formerly 065.351) Examination of how ecological principles and processes apply to, and function in, managed ecosystems, with emphasis on agricultural ecosystems. Influence of agricultural practices on populations and ecosystem function. Ecological concepts as tools in managing systems. Prerequisite: AGEC 2370 (or 065.237) or BIOL 2300 (formerly BOTN 2370 or 001.237 or ZOO 2370 or 022.237).

### 5.1.3 Agroecology- AGEC 4000 Level

**AGEC 4510** Applications in Agroecology Cr.Hrs.3 (Formerly 065.451) Integration of information on ecological principles, agricultural production technology and environmental and socio-economic issues through in-depth studies of issues and problems in agro ecology. Prerequisite: AGEC 3510 (or 065.351).

**AGEC 4550** Project in Agroecology Cr.Hrs.6 Independent research project on an Agroecological topic. Students perform research and meet regularly with advisors. Progress reports are required, and final results are presented in written and verbal reports. Classes are held on professional topics. Not to be held with AGEC 4540 (or 065.454). Prerequisite: AGEC 3510 (or 065.351).



### 5.1.4 Animal Science-ANSC 0 Level

**ANSC 0420** Animal Biology and Nutrition Cr.Hrs.4  
(Formerly 035.042) An introduction to animal structure and function. Genetics, growth and reproduction will be related to animal production. Further, the digestive systems of various livestock species will be studied and related to types of feedstuffs that each species can utilize. The general function of nutrients within animals will also be discussed. Nutrient content of feedstuffs and application to nutrient requirements will be discussed.

**ANSC 0600** Animal Health and Welfare Cr.Hrs.3  
(Formerly 035.060) This course will discuss the common livestock and poultry diseases of the prairie provinces. Emphasis will be placed on prevention through management and health programs but treatment of specific diseases will be addressed. Animal welfare as it relates to commercial animal production will be discussed. Prerequisite: ANSC 0420 (or 035.042) or equivalent.

**ANSC 0670** Beef Cattle Production and Management Cr.Hrs.4  
(Formerly 035.067) Beef cattle industry; the types of beef cattle enterprises and factors affecting profitability of production. Application of principles of nutrition, genetics and physiology in the management of beef cattle enterprises. Prerequisite: ANSC 0420 (or 035.042) or equivalent.

**ANSC 0680** Dairy Cattle Production and Management Cr.Hrs.4  
(Formerly 035.068) A study of current production practices in Canada's dairy industry with focus on nutrition, reproduction, genetics, health, replacement rearing and marketing. Prerequisite: ANSC 0420 (or 035.042) or equivalent.

**ANSC 0690** Swine Production and Management Cr.Hrs.4  
(Formerly 035.069) Swine industry; the types of swine enterprises and factors affecting profitability of production. Application of principles of nutrition, genetics and physiology in the management of swine. Prerequisite: ANSC 0420 (or 035.042) or equivalent.

**ANSC 0700** Poultry Production and Management Cr.Hrs.4  
(Formerly 035.070) The poultry industry; marketing system, breeding, hatchery practices, management and feeding of large scale turkey and chicken enterprises. Prerequisite: ANSC 0420 (or 035.042) or equivalent.

**ANSC 0720** Special Topics in Livestock Management Cr.Hrs.3  
(Formerly 035.072) Selected topics of current interest in livestock management. Prerequisite: Written consent of Director of the School of Agriculture.

**ANSC 0730** Horse Production and Management Cr.Hrs.3  
(Formerly 035.073) Principles of horse production, including genetics and breeding, reproductive management, nutrition and health. Applications to major sections of the horse industry. Prerequisite: ANSC 0420 (or 035.042) or equivalent.

### 5.1.4 Animal Science-ANSC 2000 Level

**ANSC 2500** Animal Production Cr.Hrs.3  
(Formerly 035.250) Built on concepts introduced in AGRI 1500 and AGRI 1510, by elaborating on the basic essentials of animal production. Prerequisites: AGRI 1500 (or 065.150) and AGRI 1510 (or 065.151).

**ANSC 2510** Anatomy and Physiology 1: Control Systems Cr.Hrs.3  
(Formerly 035.251) Will deal with the structure, functions and interactions of the coordinating/regulatory systems in the animal body; including the nervous, muscular, cardiovascular, respiratory, renal and endocrine systems. Co requisite: CHEM 2770 (or 002.277) or MBIO 2770 (or 060.277) or CHEM 2360 (or 002.236) or MBIO 2360 (or 060.236).

**ANSC 2520** Anatomy and Physiology 2: Nutrient Utilization Cr.Hrs.3  
(Formerly 035.252) The digestion, absorption and utilization of nutrients by farmed species. Basic characteristics of the digestive system, aspects of regulation of feed intake and rates of passage, intermediary metabolism of nutrients, growth and development, health and other factors influencing nutrient utilization. Prerequisite: ANSC 2510 (or 035.251). Co requisite: CHEM 2780 (or 002.278) or MBIO 2780 (or 060.278), or CHEM 2370 (or 002.237) or MBIO 2370 (or 060.237).

**ANSC 2530** Nutritional Toxicology Cr.Hrs.1.5  
(Formerly 035.253) The Science of dietary toxins and their interrelationships with nutrition: mode of action and metabolism of toxic chemicals that occur in food and animal feedstuffs. Prerequisite: AGRI 2190 (or 065.219)

**ANSC 2540** Companion animal nutrition and management Cr.Hrs.3  
Course material will cover the functional anatomy, genetics, nutrition, reproduction, behavior, and diseases of non-equine companion animals and ornamental fish. Pre-or Co requisite: CHEM 2770 or MBIO 2770 or CHEM 2360 or MBIO 2360 or consent of instructor.

### 5.1.4 Animal Science- ANSC 3000 Level

**ANSC 3500** Principles of Animal Genetics Cr.Hrs.3  
(Formerly 035.350) Topics discussed will include population genetics, quantitative variation, selection and mating systems with particular reference to domestic species. Prerequisite: PLNT 2520 (or 039.252).

**ANSC 3510** Feeds and Feeding Cr.Hrs.3  
(Formerly 035.351) A detailed discussion of feedstuffs used for domestic animals, animal nutrient requirements, ration balancing, feedstuff processing and feed safety. Prerequisite: ANSC 2520 (or 035.252).

**ANSC 3520** Animal Reproduction Cr.Hrs.3  
(Formerly 035.352) The comparative anatomy and physiology of reproduction of farmed animals will be emphasized. Focus will be on the natural synchronization of reproductive processes and the potential to regulate and improve reproductive efficiency. Prerequisite: ANSC 2510



(or 035.251).

**ANSC 3530** The Animal and Its Environment Cr.Hrs.3  
(Formerly 035.353) Deals with how the animal is influenced by its environment to affect health, welfare and performances. Principles of farmed animal behavior, welfare and behavioral management, health, and facility design and modification will be considered in the context of animal/environment interactions. Co requisite: ANSC 2520 (or 035.252).

**ANSC 3540** Companion animal nutrition and management Cr.Hrs.3  
Course material will cover the functional anatomy, genetics, nutrition, reproduction, behavior, and diseases of non-equine companion animals and ornamental fish. Pre-or Co requisites: CHEM 2770 or MBIO 2770 or CHEM 2360 or MBIO 2360 or consent of instructor.

### 5.1.4 Animal Science-ANSC 4000 Level

**ANSC 4090** Livestock Problems Cr.Hrs.3  
(Formerly 035.409) A minor thesis on livestock problems, prepared by the student under direction. (For Animal Systems Majors only). Prerequisite: Consent of department head.

**ANSC 4220** Animal Science Investigations Cr.Hrs.6  
(Formerly 035.422) Minor research on some problem in animal science. Instruction and supervision in setting up the project, in collecting and processing data, and in writing the report. (For fourth-year students in Animal Systems Major only.) Prerequisite: Consent of Department Head.

**ANSC 4240** Mathematical modeling of biological systems Cr.Hrs.3  
Lectures and computer based laboratory exercises will be used to discuss mathematical modeling methods applied to biological systems taking aspects of animal science as a model to develop modeling techniques. Prerequisite: MATH 1500 or MATH 1520 or Equivalent.

**ANSC 4280** Applied Animal Genetics Cr.Hrs.3  
(Formerly 035.428) Application of principles of animal breeding. Modern methods, techniques, and programs for genetic improvement of cattle, sheep, and swine. Prerequisite: ANSC 3500 (or 035.350).

**ANSC 4410** Grassland Agriculture: Plant, Animal and Environment Cr.Hrs.3  
(Formerly 035.441) Inter-relationships between the biological components of grassland agriculture as they relate to forage production on the Canadian Prairies. Topics include utilization by wild and domestic animals, plant community relationships and role of forages in multiple land use planning. This course also given in Plant Science as PLNT 4410.

**ANSC 4500** Animal Health Cr.Hrs.3  
(Formerly 035.450) Responses of basic animal functions to challenge by potentially pathogenic organisms, genetic or metabolic disorders, and toxicants will be discussed. Strategies for prevention and treatment will be outlined. Offered in 2005-2006 and alternate years thereafter. Prerequisite: ANSC 2520 (or 035.252).

**ANSC 4510** Domesticated Animal Behaviour Cr.Hrs.3  
(Formerly 035.451) An awareness and understanding of normal behaviors of animals will be emphasized. Relationships between behavior, welfare and management will be explored. Emphasis will be on farmed animals but companion animals, wild animals and laboratory species will also be discussed. Prerequisite: ANSC 2520 (or 035.252) or consent of the instructor. Offered in 2006-07 and alternate years thereafter.

**ANSC 4520** Ruminant Production Systems-Meat Cr.Hrs.3  
(Formerly 035.452) To provide an appreciation of the industry in terms of size, complexity and relationship to the economy and give an understanding of the breeding, feeding, management and marketing strategies for modern ruminant production systems. Open only to students holding at least 60 credit hours. Prerequisite: ANSC 2500 (or 035.250).

**ANSC 4530** Ruminant Production Systems-Milk Cr.Hrs.3  
(Formerly 035.453) Will describe the industry in terms of size, complexity and relationship to the economy and give an understanding of the breeding, feeding, management and marketing practices in a modern system for milk production. Open only to students holding at least 60 credit hours. Prerequisite: ANSC 2500 (or 035.250).

**ANSC 4540** Monogastric Production Systems Cr.Hrs.3  
(Formerly 035.454) Describes the swine industry in terms of size, complexity and relationship to the economy and gives an understanding of the breeding, feeding, management and marketing practices in a modern production unit. Outlines other monogastric production systems of relevance to the agriculture industry. Open only to students holding at least 60 credit hours. Prerequisite: ANSC 2500 (or 035.250).

**ANSC 4550** Avian Production Systems Cr.Hrs.3  
(Formerly 035.455) Describes the various avian systems in terms of size, complexity, and relationship to the economy and gives an understanding of the management and marketing practices in the usual poultry systems. Open only to students holding at least 60 credit hours. Prerequisite: ANSC 2500 (or 035.250).

**ANSC 4560** Issues in Animal Agriculture Cr.Hrs.3  
(Formerly 035.456) Through a combination of lectures and independent group learning activities students will develop an appreciation of the scope and complexities of current issues facing the animal industry and integrate knowledge accumulated through the Animal Systems Program using case study problems and group project work.

**ANSC 4570** Advanced Applied Animal Nutrition Cr.Hrs.3  
(Formerly 035.457) An advanced study of theoretical and applied aspects of monogastric and ruminant nutrition. A laboratory component will provide training in current techniques in feed analyses and computer modeling. Offered in 2005-2006 and alternate years thereafter. Prerequisite: ANSC 3510 (or 035.351)

### 5.1.5 Biosystems Engineering Course Descriptions-0 Level

**BIOE 0222** Precision Agriculture Cr.Hrs.4  
Precision agriculture is a philosophy of agricultural management that has been enabled by modern technology.



This course will examine both the technology and the techniques that can be used to improve the efficiency of agricultural operations by decreasing costs, increasing profits, and decreasing hazards to the environment.

**BIOE 0400 Farm Power Cr.Hrs.4**  
(Formerly 034.040) Basic operating principles of electric motors and gasoline, diesel, and LPG engines with emphasis on fuels, fuel systems, ignition systems, lubrication, and power transmission. Dynamometer tests for efficiency, traction, tractor testing, and power cost estimating.

**BIOE 0600 Farm Machinery Cr.Hrs.4**  
(Formerly 034.060) Operating principles of basic farm implements with emphasis on seed cleaning, seeding, tillage, haying, and harvest machines including their selection, adjustment, efficiency, and cost of operation with respect to test data.

**BIOE 0690 Water Management Cr.Hrs.4**  
(Formerly 034.069) Surveying including use of the level instrument and steel tape, agricultural drainage, dugouts and wells for farm water supply, irrigation, pump selection, the Water Rights Act.

**BIOE 0700 Agricultural Buildings and Environments Cr.Hrs.4**  
(Formerly 034.070) Factors that impact the practicality of farm buildings. Components of buildings, including materials and construction techniques. Techniques of maintaining building environments to facilitate production and/or storage.

**BIOE 0710 Materials Handling and Electrical Controls Cr.Hrs.3**  
Fundamental concepts and systems approach to storing, conditioning, moving, processing, and metering of agricultural produce. Principles and practices of fans, grain drying, dust control, and electrical supply. Students may not hold credit for BIOE 0710 and the former 034.066.

### 5.1.5 Biosystems Engineering Course Descriptions-2000 Level

**BIOE 2000 Coop Work Study 1 Cr.Hrs.1**  
Work assignments in business, industry or government for cooperative education students in Biosystems Engineering. Requires submission of a written report covering the work completed during the four-month work period.

**BIOE 2090 Machinery for Agricultural Production Cr.Hrs.4**  
(Formerly 034.209) Farm machinery selection. Machine performance. Ownership and operating costs. Analysis of machine functions for safety and efficiency.

**BIOE 2110 Transport Phenomena Cr.Hrs.3**  
(Formerly 034.211) Principles of heat transfer, solar radiation, psychometrics, molecular diffusion, mass transfer and refrigeration and their application to biosystems. Prerequisite: ENG 1460 (or 130.112).

**BIOE 2222 Precision Agriculture Concepts and Applications Cr.Hrs.4**  
Precision agriculture is a philosophy of agricultural management that has been enabled by modern technology. This course examines the technology and the techniques of precision agriculture including GPS, GIS, variable rate technologies, and yield monitoring that can be used to

improve the efficiency of agricultural operations by decreasing costs, increasing profits, and decreasing hazards to the environment.

**BIOE 2580 Biosystems Engineering Design Trilogy 1 Cr.Hrs.4**  
(Formerly 034.258) Biosystems Engineering and its place in the professions of engineering and agrology. Design concepts, with an emphasis on team building and technical communication skills. Philosophy of project planning. Preparation of a conceptual design by teams in response to design assignment submitted by industry. Written report presented orally. Prerequisite: ENG 1430 OR THE FORMER ENG 1400 (OR 130.140).

**BIOE 2590 Biology for Engineers Cr.Hrs.3**  
(Formerly 034.259) Provide theories and principles of Biology to engineering students and present applications of biological principles to engineering problems. Fundamental theories involved in cell structure and function, metabolism, genetics and heredity, bacteria and virus structure and function, plant and animal structure and function are covered. An introduction to animal and plant physiology is also provided. Laboratory sessions and term assignments focus on the engineering applications of these basic theories and principles to provide a good understanding of the role of Biology in Engineering. Prerequisite: CHEM 1300 (or 002.130).

### 5.1.5 Biosystems Engineering Course Descriptions-3000 Level

**BIOE 3000 Cooperative Work Study 2 Cr.Hrs.1**  
Work assignment in business, industry, or government for cooperative education students in Biosystems Engineering. Requires submission of a written report covering the work completed during the four-month work period. Not to be held with the former BIOE 3550 or 034.355. Prerequisite: BIOE 2000.

**BIOE 3200 Environmental Engineering for Non-Engineers Cr.Hrs.3**  
This course will discuss air pollution and odor control, remediation of contaminated soil and ground water, wastewater and solid waste treatment, and the role of biotechnology in these processes. Consent of Instructor required.

**BIOE 3270 Instrumentation and Measurement for Biosystems Cr.Hrs.4**  
(Formerly 034.327) Basic instrumentation for measuring electrical and non-electrical quantities associated with biosystems engineering and industry; transducers for automatic control. Prerequisites: [MATH 2132 (or the former MATH 2110 (or 136.211))] and [ENG 1450 or the former ENG 1180 (130.118)].

**BIOE 3320 Engineering Properties of Biological Materials Cr.Hrs.4**  
Engineering properties of biological and interacting materials within the system. Relationship between composition, structure, and properties of plant, animal, and human tissues. Definition and measurement of mechanical, thermal, electromagnetic, chemical and biological properties and their variability. Use of these properties in engineering calculations. Prerequisites: Math 2130 (or Math 2100 or



136.210), CIVL 2800 (or 23.280) or MECH 2222 (or Mech 2220 or 025.222) BIOE 2580 (or 034.258). Not to be held with the former 034.323.

**BIOE 3530** Engineering Fundamentals Cr.Hrs.3 (Formerly 034.353) Principles of heat transfer, steam, psychometrics, fluid mechanics, material balances, electricity and refrigeration. Cannot be held for credit in the Faculty of Engineering. Not to be held with the former 034.329. Prerequisite: [MATH 1300 or equivalent] and [MATH 1500 or equivalent] or the former MATH 1680 (136.168).

**BIOE 3580** Biosystems Engineering Design Trilogy 2 Cr.Hrs.4  
BIOE 3580 Biosystems Engineering Design Trilogy 2 Cr.Hrs.4 (Formerly 034.358) Advanced design concepts associated with Biosystems Engineering, with emphasis on the principles of safety and human factors engineering. Theory of project planning. Preparation of a preliminary design by design teams in response to a design assignment submitted by industry. Written report with engineering drawings presented orally. Prerequisites: BIOE 2580 (or 034.258 or 034.214). Not to be held with the former 034.326.

**BIOE 3590** Mechanics of Materials in Biosystems Cr.Hrs.4 (Formerly 034.359) In this course students will be exposed to both the theory and physical behaviour of materials when subjected to loads. The course will be delivered using a combination of lectures and hands-on labs. The materials presented include a wide range of design biosystems engineers may be involved with, including plastics, bone, wood, concrete, steel, other biological materials and composites. Prerequisite: CIVL 2800 (or 023.280), or consent of instructor. Not to be with the former 034.324

### 5.1.5 Biosystems Engineering Course Descriptions-4000 Level

**BIOE 4000** Coop Work Study 3 Cr.Hrs.1  
Work assignments in business, industry or government for cooperative education students in Biosystems Engineering. Requires submission of a written report covering work completed during the four-month work period. Not to be held with the former BIOE 4550 ( or 034.455). Prerequisite: BIOE 3000.

**BIOE 4240** Graduation Project Cr.Hrs.3  
Either an independent or a directed study including at least one of: a comprehensive literature review, an experimental research project, or an engineering design problem. The project is to be concluded by a formal report or thesis. Prerequisites: BIOE 3270 (034.327) or approval of department.

**BIOE 4390** Unit Operations 1 Cr.Hrs.4  
Equipment and systems used in handling, mixing, size reduction, separation and size enlargement of value-added food products. Prerequisites: CIVL 2790 (or 023.279) or MECH 2262 (or 025.226). Corequisites: BIOE 3320 (or 034.332 or 034.323), BIOE 3270 (or 034.327).

**BIOE 4412** Design of Light-Frame Building Systems Cr.Hrs.4  
Light-frame buildings as a structural and environmental system; structural loads in building systems; energy (heat), moisture and air contaminants in building systems; built-

environment for building occupants. Hands-on labs of constructing small-scale structures for students to gain an understanding of building construction techniques. Prerequisites: BIOE 2110 ( 034.211) and BIOE 3590 (034.359).

**BIOE 4414** Imaging and Spectroscopy for Biosystems Cr.Hrs.4  
The purpose of this course is to familiarize senior Biosystems Engineering students with the fundamentals of imaging and spectroscopy for biosystems. Techniques of image acquisition, storage, processing, and pattern recognition will be taught. Various spectroscopy techniques and their applicability to biological materials will be discussed. Analysis of data using statistical, artificial neural networks and chemometric methods will be covered. Offered in alternate years. Prerequisite: BIOE 3270 (034.327)

**BIOE 4416** Topics in Biosystems Engineering Cr.Hrs.3  
This course will cover contemporary topics in Biosystems Engineering. The specific topics and a detailed outline will be available at the time of registration. Prerequisite: Permission of the department.

**BIOE 4420** Crop Preservation Cr.Hrs.4 (Formerly 034.442) Biological and physical deterioration during storage. Methods of preserving and storing cereals, oilseeds, and other agricultural crops. Prerequisite: BIOE 2110 (or 034.211).

**BIOE 4440** Bioprocessing for Biorefining Cr.Hrs.4  
This course will provide students with an understanding of the principles involved in the design of proper conditions for processing of biomaterials for production of high-quality biofuels and bioproducts. The content of this course is built on the principles of physics, transport phenomena, thermodynamics, reaction, kinetics, fermentation, and industrial unit operations. Prerequisite: BIOE 2110 (or 034.211). Pre-or corequisite: BIOE 3320 (or 034.332 or 034.323)

**BIOE 4460** Air Pollution Assessment and Management Cr.Hrs.4  
Air pollutant sources and characteristics, their impact on the environment, their behaviour in the atmosphere. Methods of sampling and measurement and the basic technological alternatives available for separation/removal and control. Particular problems of regional interest are discussed. Corequisites: CIVL 2790 (or 023.279) or MECH 2262 (or MECH 2260 or 025.226).

**BIOE 4480** Environmental Impact Assessment Cr.Hrs.4 (Formerly 034.448) Basic methodologies for conducting impact assessments, including physical, chemical and ecological impacts. Prerequisites: approval of department. Not offered in 2005-2006.

**BIOE 4500** Water Management Cr.Hrs.3 (Formerly 034.450) Introduction to the design of irrigation and drainage systems. Topics in irrigation include sprinklers, laterals, mainline and pumps. Drainage topics cover both the surface and subsurface systems. Analysis of precipitation and runoff. Environmental impacts of water management. Offered alternate years.



**BIOE 4520** Crop Preservation and Handling Cr.Hrs.3  
(Formerly 034.452) Interaction of biological and physical factors related to methods of preserving, storing, and handling cereals, oilseeds, and other agricultural crops. Offered alternate years.

**BIOE 4530** Analysis and Design of Biomachinery Cr.Hrs.4  
Design of machines for bioprocessing; traction mechanics and tractor chassis mechanics; power transmission components; functional requirements for field and process machines; fluid power hydraulics. Prerequisite: BIOE 2580 (or 034.258).

**BIOE 4560** Structural Design in Wood Cr.Hrs.4  
(Formerly 034.456) Design using wood as a structural material in light-frame buildings. Consideration of design constraints associated with sawn lumber as well as based composite materials. Emphasis on use of computer based design aids. Prerequisites: CIVL 3770 (or 023.377) or BIOE 3590 (034.359) or 034.324.

**BIOE 4580** Biosystems Engineering Design Trilogy 3 Cr.Hrs.4  
(Formerly 034.458) Advanced design concepts, with emphasis on the principle of quality control. Application of project planning techniques. Principles of owning and operating an engineering consulting company. Preparation of a final design by design teams in response to a design assignment submitted by industry. Written report with cost of services rendered, presented orally. Prerequisite: BIOE 3580 (or 034.358) or 034.326. Not to be held with the former 034.413.

**BIOE 4590** Management of By-Products from Animal Production Cr.Hrs.4  
Topics covered include solid and liquid manure, manure characteristics, manure collection, storage, land application and utilization, biological treatment, design of equipment and facilities for manure handling. Environment issues, such as odour and water pollution associated with manure management will also be discussed. Prerequisites: CIVL 2790 (or 023.279) or MECH 2262 (or MECH 2260 or 025.226).

**BIOE 4600** Design of Water Management Systems Cr.Hrs.4  
(Formerly 034.460) To introduce the basic theoretical principles in the design of irrigation and drainage systems. Topics covered include the determination of irrigation depth and interval, evapotranspiration, measurement and analysis of precipitation, design of sprinkler and drip irrigation systems, selection of pumps, surface and subsurface drainage design, water quality issues, salinity management, and the environmental impact of water management practices. Corequisite: SOIL 4060 (or 040.406) or CIVL 3730 (or 023.373) or consent of instructor.

**BIOE 4610** Design of Assistive Technology Devices Cr.Hrs.4  
(Formerly 034.461) Application and design of technology for individuals with disabilities; emphasizing the development of the requisite knowledge, skills, and attitudes to evaluate, design, and implement client-centred assistive technology. A multi-disciplinary approach to learning and applying knowledge will be emphasized with engineering and medical rehabilitation students collaborating on a design project. Prerequisite: BIOL 1412 (or ZOO 1330 or 022.133).

**BIOE 4620** Remediation Engineering Cr.Hrs.4  
The theoretical basis for the engineering design of different remediation technologies to treat contaminated soil and groundwater will be introduced. Methods for site characterization, monitoring of progress in remediation, and modeling of the remediation process will be presented. Different methods such as soil washing, air sparging, bioremediation, phytoremediation, constructed wetlands, electrokinetic remediation, reactive barriers will be discussed. Prerequisite: CIVL 2790 (or 023.279) or MECH 2262 (or MECH 2260 or 025.226).

**BIOE 4630** Pollution Prevention Practices Cr.Hrs.4  
To give students an understanding of pollution prevention as it relates to solids and hazardous waste management, air and water pollution, energy usage, and resource depletion. To evaluate practices on improved manufacturing operations, present fundamentals of pollution prevention economics, examine waste minimization incentives, design improvements to existing systems, and investigate overall sustainability of industrial practices. Prerequisite: CIVL 2790 (or 023.279) or MECH 2262 (or MECH 2260 or 025.226).

**BIOE 4640** Bioengineering Applications in Medicine Cr.Hrs.4  
This course surveys bioengineering applications and medicine from a clinical engineering perspective. Topics include: clinical engineering practice; device development legislation; biomedical sensors; biosensors; biomaterials and biocompatibility; as well as the principles of and design for medical imaging equipment. Prerequisites: BIOL 1410 (or ZOO 1320 or 022.132) and BIOL 1412 (or ZOO 1330 or 022.133) and BIOE 3320 (0343.332).

**BIOE 4700** Alternative Building Design Cr.Hrs.4  
This course will provide students with experience in the design of structures that utilize natural and green building materials and techniques. Students will get hands-on lab experience with various natural building materials such as straw, straw light clay, cob and stackwall. Prerequisites: BIOE 3590 (or 034.359) or CIVL 3770 (or 023.377).

### 5.1.6 Entomology Course Descriptions-0 Level

**ENTM 0610** Beekeeping Cr.Hrs.2  
(Formerly 038.061) Introduction to beekeeping that includes economics and marketing of honey and beeswax, equipment and its construction, pollen and nectar plants, pollination, management systems, diseases and pests, honey handling, package bees, wintering of bees, etc.

**ENTM 0620** Pest Management and Farm Insects Cr.Hrs.4  
(Formerly 038.062) Characteristics, damage, and identification; insecticide use and safety; life histories and control of common Manitoba livestock, field and farmyard insects. General principles of pest management in agriculture will also be discussed.

### 5.1.6 Entomology Course Descriptions-1000 Level

**ENTM 1000** World of Bugs Cr.Hrs.3  
A survey of insect biology and life styles with emphasis on



insect diversity and human-insect interactions.

### 5.1.6 Entomology Course Descriptions- 2000 Level

**ENTM 2050** Introductory Entomology Cr.Hrs.3  
(Formerly 038.205) A basic course for students requiring a foundation in entomology. The anatomy, life history, identification, adaptations, and relations of insects to humans are examined along with methods of collecting and preserving insect specimens. Students may not hold credit in ENTM 2050 (or 038.205) and the former 038.315 or 022.349.

### 5.1.6 Entomology Course Descriptions- 3000 Level

**ENTM 3160** Veterinary and Wildlife Entomology Cr.Hrs.3  
(Formerly 038.316) An introduction to the insects and their relatives that affect domestic animals, pets and wildlife. Special consideration is given to life histories, insect/host interaction, evolutionary relationships, impact on host vertebrates and pest management. Not all courses are offered every year. Please contact the department regarding course availability.

**ENTM 3162** Manitoba's Insect Fauna Cr.Hrs.3  
A collection of insects is required. Emphasis is placed on collecting techniques, specimen preparation, diversity of species collected, organization and curatorial skills, and accuracy of identification. Students should contact instructors in April preceding registration in this course. Prerequisite: ENTM 2050.

**ENTM 3170** Crop Protection Entomology Cr.Hrs.3  
(Formerly 038.317) A course for students requiring a foundation in entomology and knowledge of major insect pest groups in Western Canada. The pests and principles for their control (chemical, cultural, mechanical, physical and biological methods) are explored with emphasis on the entire ecosystem. Students may not hold credit in ENTM 3170 and 038.413 or 038.431.

### 5.1.6 Entomology Course Descriptions- 4000 Level

**ENTM 4000** Topics in Entomology Cr.Hrs.3  
A Course of assigned readings and literature review essays for students in the minor in Entomology program. Prerequisite ENTM 2050 (or 038.205) and consent of department head.

**ENTM 4250** Pesticide Toxicology Cr.Hrs.3  
(Formerly 038.425) Action, behaviour, and fate of pesticides in target and non-target species and in the environment. Past, present, and future chemical control agents will be discussed on the basis of chemical and biochemical knowledge. Prerequisite: A course in biochemistry. Not all courses are offered every year. Please contact the department regarding course availability.

**ENTM 4280** Aquatic Entomology Cr.Hrs.3  
(Formerly 038.428) Adaptations and significance of insects

to aquatic habitats, with emphasis on identification. Aquatic insects as indicator species of pollution and their response to chemical pesticide application. A collection of aquatic insects is required. Prerequisites: ENTM 2050 (or 038.205); AGECE 2370 (or 065.237) or BIOL 2300 (formerly ZOO 2370 or 022.237) or BOTN 2370 (or 001.237); or consent of instructor. Not all courses are offered every year. Please contact the department regarding course availability.

**ENTM 4320** Pollination Biology Cr.Hrs.3  
(Formerly 038.432) The biology, ecology of social, semisocial and solitary insect pollinators and their ecological interactions with entomophilous plants. Not all courses are offered every year. Please contact the department regarding course availability.

**ENTM 4500** Insect Taxonomy and Morphology Cr.Hrs.3  
(Formerly 038.450) Study of insect structure combined with evolution of insect orders. Modern concepts of subspecies, species and higher taxa. Collection required (contact instructor for details in April/May of preceding year.) Students may not hold credit for ENTM 4500 (or 038.450) and the former 038.412. Prerequisite: ENTM 2050 (or 038.205) or consent of instructor.

**ENTM 4520** Physiological Ecology of Insects Cr.Hrs.3  
(Formerly 038.452) The effect of environmental factors such as temperature, moisture, light and other organisms on the physiology and ecology of insects. Prerequisite: ENTM 2050 (or 038.205) or consent of instructor. Not all courses are offered every year. Please contact the department regarding course availability.

### 5.1.7 Food Science Course Descriptions- 1000 Level

**FOOD 1000** Food Safety Today and Tomorrow Cr.Hrs.3  
(Formerly 078.100) A contemporary examination of the safety of the food supply - where, how and why problems may arise and what is and can be done to consistently achieve high quality, safe food. Controversial issues (residues, organic, biotechnology, irradiation) will be discussed in a balanced manner, and prospects for the future presented.

### 5.1.7 Food Science Course Descriptions- 2000 Level

**FOOD 2500** Food Chemistry Cr.Hrs.3  
(Formerly 078.250) The chemical components of food. Chemical problems and chemical changes which exist uniquely in foods. Prerequisite: CHEM 2770 (or 002.277) or MBIO 2770 (or 060.277) or CHEM 2360 (or 002.236) or MBIO 2360 (or 060.236). Not to be held with the former 078.422.

### 5.1.7 Food Science Course Descriptions- 3000 Level

**FOOD 3010** Food Process 1 Cr.Hrs.3  
(Formerly 078.301) The basic principles and practices of the major techniques used in food processing and preservation are covered. Emphasis is placed on thermal processing,



drying, evaporation, chilling, freezing, separation, packaging and sanitation. Also preservation by salting, smoking, microwave, radiation and chemical techniques is presented. Critical issues in food regulations are introduced. Prerequisite: any MATH course at the 1000 level.

**FOOD 3160** Frozen Dairy Products Cr.Hrs.3 (Formerly 078.316) Technology of frozen dairy products, including selection and processing of materials and handling of products. Standards and quality control programs for major dairy products will be covered. Offered in 2006-07 and alternate years thereafter.

**FOOD 3170** Cheese and Fermented Milk Products Cr.Hrs.3 (Formerly 078.317) Selection and evaluation of raw materials and lactic cultures are covered. Processing, packaging and distribution of cheddar and cottage cheese, cultured milk, cream and yogurt are studied. Offered in 2005-2006 and alternate years thereafter.

**FOOD 3200** Baking Science and Technology Cr.Hrs.3 (Formerly 078.320) The science and technology of transforming wheat into quality baked foods. Focus will be on the biophysical and biochemical basis for the functionality of intrinsic wheat constituents, e.g. starch, and gluten proteins, and extrinsic ingredients, e.g. yeast, chemical leaveners, fats, oxidants, enzymes and other improvers. Principles of product formulations and modern processing techniques used to add value to wheat as diverse foods will also be covered. Prerequisite: CHEM 2770 (or 002.277) or MBIO 2770 (or 060.277).

**FOOD 3210** Food Engineering Fundamentals Cr.Hrs.3 (Formerly 078.321) Applications of engineering fundamentals to unit operations in the food industry. Prerequisite: BIOE 3530 (or 034.353).

**FOOD 3220** Grains for Food and Beverage Cr.Hrs.3 The science and technology behind the functionality of major Canadian cereal grains and grain legumes for food and beverage. Grains covered include wheat, barley, oats, peas, beans, and lentils in the context of their processing into products such as bread, pasta and beer, and foods high in dietary fibre. Details are presented on the differing physical and chemical attributes of grains to make quality products with focus on the roles of protein, starch, and non-starch polysaccharides. Prerequisite: FOOD 2500 or equivalent.

**FOOD 3500** Processing of Animal Food Products Cr.Hrs.3 (Formerly 078.350) Processing of materials of animal origin will be studied with emphasis on product quality and safety. Impact of initial characteristics as well as processing technologies will be discussed in relation to nutritive value, convenience, functionality, aesthetic factors and food safety. Prerequisite: CHEM 2770 (or 002.277) or MBIO 2770 (or 060.277) or CHEM 2360 (or 002.236) or MBIO 2360 (or 060.236). Offered in 2006-2007 and alternate years thereafter.

### 5.1.7 Food Science Course Descriptions- 4000 Level

**FOOD 4010** Food Process 2 Cr.Hrs.3 (Formerly 078.401) The processing of specific food groups is covered. The functions and changes in the primary chemical

components (carbohydrates, proteins and lipids) of the commodities receive special consideration. New technologies including thermal/nonthermal processing, radiation, extrusion, minimal processing and other advanced processing methods will be studied. Prerequisite: FOOD 3010 (or 078.301).

**FOOD 4120** Food Science Seminar Cr.Hrs.3 (Formerly 078.412) Written and verbal presentations of selected topics of current interest in the food science area. Should be taken in fourth year.

**FOOD 4150** Food Microbiology 1 Cr.Hrs.3 (Formerly 078.415) Relationships of microorganisms to processing and spoilage of food.

**FOOD 4160** Food Analysis 1 Cr.Hrs.3 (Formerly 078.416) This course exposes students to the principles, methods, and techniques of qualitative and quantitative physical, chemical and biological analyses of foods. Major emphasis is placed on understanding the basic principles of classical and instrumental methods of analysis. Criteria for the choice of various analytical methods, methods for treating data and sampling techniques will be studied. Prerequisite: FOOD 2500 (or 078.250).

**FOOD 4200** Quality Control in Foods Cr.Hrs.3 (Formerly 078.420) Fundamentals of quality control and their industrial application through physical, chemical, microbiological, statistical and sensory methods will be studied. Statistical process control (SPC) will be mainly covered; required background knowledge of statistics will be reviewed briefly. Prerequisite: FOOD 3010 (or 078.301).

**FOOD 4230** Food Research Cr.Hrs.3 (Formerly 078.423) Research interests and aptitudes of students are developed through specific project assignments related to the food industry. Prerequisite: Permission of Department Head required.

**FOOD 4240** Analysis of Water and Wastes Cr.Hrs.3 (Formerly 078.424) Introduction to the principles and application of the standard methods employed in the analysis of water and wastes in the food processing industry.

**FOOD 4250** Food Analysis 2 Cr.Hrs.3 (Formerly 078.425) Advanced techniques employed in the physico-chemical analysis of food products as preparation for research, development, and inspection roles in government and in industry. Prerequisite: FOOD 4160 (or 078.416).

**FOOD 4260** Water Management in Food Processing Cr.Hrs.3 The course is devoted to the management of water and wastewater in food processing. The roles of water in food processing, recycle and reuse opportunities, treatment options for water and wastewater are presented. The course also discusses water stewardship in relation to food processing, water and wastewater regulations and implication for HACCP and ISO. Laboratory sessions are designed for the student to become familiar with Standard Methods for the Examination of Water and Wastewater.

**FOOD 4310** Introduction to HACCP Cr.Hrs.3 (Formerly 078.431) This course will cover the principles



related to hazard analysis and critical control points (HACCP), a food safety and self-inspection system that is widely endorsed internationally by industry, consumer and regulatory groups. HACCP examines chemical, physical and biological hazards and identifies critical control points involved in producing, manufacturing and processing food products. Prerequisite or co requisite: FOOD 4150 (or 078.415) or consent of instructor.

**FOOD 4500** Food Safety and Regulations Cr.Hrs.3 (Formerly 078.450) Current food safety issues; government, industry and consumers' role in organizing a safe food supply system; food laws and regulations in Canada and internationally. Preventative measures to increase food safety and sanitation will also be covered. Offered in 2005-2006 and alternate years thereafter. Prerequisites: FOOD 4150 (or 078.415) or FOOD 4300 (or 078.430).

**FOOD 4510** Food Product Development Cr.Hrs.3 (Formerly 078.451) This course will allow the student to gain an understanding of the product development procedure as it relates to the food industry. Emphasis will be on application of basic knowledge of foods and food processing in designing a new product. Prerequisites: MKT 2210 (or 118.221), STAT 2000 (or 005.200) or equivalent, FOOD 3010 (or 078.301) or consent of instructor. Cannot be held with HNSC 4280 (or 030.428).

**FOOD 4540** Functional Foods and Nutraceuticals Cr.Hrs.3 (Formerly 078.454) The course will examine the bioactive components of functional foods and nutraceuticals, their sources, chemistry, process technology, efficacy, safety and regulation. Prerequisite: CHEM 2770 (or 002.277) or MIBO 2770 (or 060.277) or MIBO 2360 (or 060.236) or CHEM 2360 (or 002.236).

### 5.1.8 Plant Science Course Descriptions-0 Level

**PLNT 0410** Cereal and Oilseed Production Practices Cr.Hrs.4

(Formerly 039.041) Production practices for wheat (spring and winter), barley, oats, rye, triticale, canola and flax will be discussed, including tillage, seeding, fertility, pest control, harvesting, rotation and utilization. Prerequisite: DAGR 0420 (or 065.042).

**PLNT 0690** Landscape Maintenance Cr.Hrs.3

(Formerly 039.069) Establishment and maintenance of trees, shrubs, herbaceous plants and turf grass in the landscape environment. Equivalent course offered through the Prairie Horticulture Certificate program; contact the Director of the School of Agriculture.

**PLNT 0730** Commercial Vegetable Production Cr.Hrs.3

(Formerly 039.073) Production problems and practices, environmental considerations, and the storage and marketing of the major vegetable crops. Equivalent course offered through the Prairie Horticulture Certificate program; contact the Director of the School of Agriculture.

**PLNT 0740** Commercial Fruit Production Cr.Hrs.3

(Formerly 039.074) Cultural steps involved in the commercial production of tree fruits and small fruits with specific reference to Manitoba conditions. Equivalent course offered

through the Prairie Horticulture Certificate program; contact the Director of the School of Agriculture.

**PLNT 0750** Forage and Pasture Management Cr.Hrs.4 (Formerly 039.075) For forage crops and the continuum of improved and unimproved pasture land a discussion of production practices including: choice of species and cultivars of forage crops, cultural management including tillage practices, pest control, forage harvesting, grazing management and seed production. Prerequisite: DAGR 0420 (or 065.042).

**PLNT 0760** Special Crops Cr.Hrs.4

(Formerly 039.076) Production practices of special crops for Manitoba including: quality and grade, crop and cultivar selection, cultural requirements including tillage, pest control, fertility requirements, harvesting, rotation and utilization. Prerequisite: DAGR 0420 (or 065.042).

**PLNT 0770** Weed Management Cr.Hrs.4

(Formerly 039.077) General principles of pest management and pesticide use safety as they relate to weed control. Economic importance, principles of cultural, biological and chemical weed control, weed identification, introduction to herbicides and factors influencing their use and selectivity. Prerequisite: DAGR 0420 (or 065.042).

**PLNT 0780** Plant Disease Management Cr.Hrs.4

(Formerly 039.078) General principles of pest management and pesticide use safety as they relate to plant disease control. Discussion of diseases attacking field and horticultural crops in the prairies including: disease symptoms, cycles, prevention and control. Prerequisite: DAGR 0420 (or 065.042).

**PLNT 0790** Landscape Horticulture Cr.Hrs.4

(Formerly 039.079) Principles of the production and use of horticultural plants in the rural and urban landscape including the establishment and value of shelterbelts. Topics include basic plant propagation, the principles of choosing and establishing ornamental trees, shrubs, herbaceous perennials, annuals, lawns, and multi-use fruit-bearing plants in the landscape, and development of a landscape plan.

**PLNT 0800** Diversification with Horticultural Crops Cr.Hrs.4

(Formerly 039.080) Principles of the production and unique characteristics of horticultural crops including potato, vegetable, fruit, herb, spice, and nutraceutical. The potential for diversifying into and adding value to these alternate crops is examined.

**PLNT 0810** Special Topics in Crop Management Cr.Hrs.3

(Formerly 039.081) Selected topics of current interest in Crop Management. Prerequisite: written consent of the Director of the School of Agriculture.

**PLNT 0820** Organic Crop Production on the Prairies Cr.Hrs.3

(Formerly 039.082) Management principles and practices involved in the production of organic field and forage crops with a focus on the Canadian Prairie Region. Prerequisites: DAGR 0420 (or 065.042), PLNT 0410 (or 039.041), SOIL 0420 (or 040.042), and ENTM 0620 (or 038.062) or consent of the instructor.



### 5.1.8 Plant Science Course Descriptions- 1000 Level

#### PLNT 1000 Urban Agriculture Cr.Hrs.3

Urban environments and their importance for food production, increasing biodiversity, and reducing pollution are presented. Topics include principles of vegetable, fruit and herb production, landscape plants, and utilization of natural systems for composting, water management and reduced pesticide use. Benefits to environment, community development, and human health are discussed.

### 5.1.8 Plant Science Course Descriptions- 2000 Level

#### PLNT 2500 Crop Production Cr.Hrs.3

(Formerly 039.250) An introduction to the principles and practices of crop production in Canada. Topics will include physiological processes and factors affecting plant yield, plant improvement, seed production, and production of the major cereal, oilseed, forage and special crops. Prerequisite: AGRI 1500 (or 065.150).

#### PLNT 2510 Fundamentals of Horticulture Cr.Hrs.3

(Formerly 039.251) Principles of the culture, marketing, and utilization of fruits, vegetables, and ornamentals, their contribution to the economy and well-being of consumers, and impact of horticultural activities on the environment. Prerequisites: BIOL 1020 and BIOL 1030 or the former 071.125; AGRI 1500 (or 065.150); or consent of instructor. This course is offered in alternate years.

#### PLNT 2520 Genetics Cr.Hrs.3

(Formerly 039.252) Basic principles of genetics and their practical application in the areas of DNA structure and function, genome organization and genetic analysis. Laboratory sessions provide practical experience in solving genetic problems and conducting genetic investigations. Not to be held with BIOL 2500 or the former BOTN 2460 (or 001.246). Prerequisite: a minimum grade of "C" in BIOL 1020 and BIOL 1030 or the former 071.125.

#### PLNT 2530 Plant Biotechnology Cr.Hrs.3

(Formerly 039.253) An introduction to current biotechnological techniques, including recombinant DNA, plant tissue culture, plant transformation and regeneration. A background to the techniques as well as a discussion of their applications in current biology and crop production will be examined. A laboratory will provide first hand experience with many of the techniques. Not to be held with the former 039.450. Prerequisites: CHEM 2770 (or 002.277) or MBIO 2770 (or 060.277) and PLNT 2520 (or 039.252) or BIOL 2500 or the former BOTN 2460 (or 001.246).

### 5.1.8 Plant Science Course Descriptions- 3000 Level

#### PLNT 3140 Introductory Cytogenetics Cr.Hrs.3

(Formerly 039.314) An introduction to the structure and function of eukaryotic genomes, from the gene to the chromosome. Topics include the cell cycle, meiosis, chromatin, chromosome and genome organization, karyotyping, changes in chromosome number and structure,

physical mapping and chromosome evolution. Labs cover use of the microscope, meiosis, chromosome staining and banding, and bioinformatic analysis of chromosomes. Prerequisites: PLNT 2520 (or 039.252) or BIOL 2500 or the former BOTN 2460 (or 001.246).

#### PLNT 3370 Environmental Horticulture Cr.Hrs.3

(Formerly 039.337) Management principles involved in the production of ornamental perennial plants in the nursery and their establishment and maintenance in the urban environment with an emphasis on arboriculture. Includes a number of tutorials to allow for guest speakers, discussions and tour.

#### PLNT 3500 Plant Physiology Cr.Hrs.3

(Formerly 039.350) An integrative view of major physiological processes in plants, spanning the biochemical, cellular, tissue, organ and whole plant levels of organization and addressing the effects of environmental conditions on these processes. Topics covered: photosynthesis and respiration, water relations, plant nutrition, assimilate partitioning, and regulation of growth. Not to be held with BIOL 3452 or the former BOTN 3010 (or 001.301) or the former 1.317. Prerequisites: BIOL 1020 and BIOL 1030 or the former 071.125; CHEM 2770 (or 002.277) or MBIO 2770 (or 060.277) or CHEM 2360 (or 002.236) or MBIO 2360 (or 060.236); BIOL 2242 or the former BOTN 2010 (or 001.201) or the former 001.230 or consent of instructor.

#### PLNT 3510 Cropping Systems Cr.Hrs.3

(Formerly 039.351) Examination and analysis of sustainable prairie cropping systems. Emphasis will be placed on integrated systems that optimize the benefits of crop rotation, and conserve soil, water and wildlife resources. Conventional, traditional and alternative crop production systems will be discussed. Includes a limited number of tutorials to allow for field tours and guest speakers. Prerequisite: PLNT 2500 (or 039.250).

#### PLNT 3520 Principles of Plant Improvement Cr.Hrs.3

(Formerly 039.352) Basic objectives, principles, and methods of plant genetic improvement. Traditional and modern plant breeding, genetic resources, selection, and applications of tissue culture, genetic engineering and molecular markers to plant improvement. Prerequisite: PLNT 2520 (or 039.252) or BIOL 2500 or the former BOTN 2460 (or 001.246).

#### PLNT 3530 Horticultural Food Crops Cr.Hrs.3

(Formerly 039.353) Management practices, environmental considerations, and physiological factors involved in the production, marketing, and handling of the major vegetable and fruit crops. Pre- or co requisite: PLNT 2510 (or 039.251) or consent of instructor.

#### PLNT 3540 Weed Science Cr.Hrs.3

(Formerly 039.354) Identification, biology and ecology of weeds of agricultural importance in western Canada, including principles of cultural, mechanical, biological and chemical control. Topics include weed interference, effects of rotational and management practices on weed species composition, herbicide selectivity and mechanism of action, and emerging control technologies. Prerequisites: BIOL 1020 and BIOL 1030 or the former 071.125; AGRI 1500 (or 065.150); or consent of instructor.



**PLNT 3560** Organic Crop Production on the Prairies Cr.Hrs.3  
(Formerly 039.356) Management principles and practices involved in the production of organic field and forage crops with a focus on the Canadian Prairie region. Also available in online delivered format. Prerequisites: PLNT 2500 (or 039.250) and SOIL 3600 (or 040.360) or the former 040.351 or consent of instructor.

**PLNT 3570** Fundamentals of Plant Pathology Cr.Hrs.3  
(Formerly 039.357) An introduction to the science of plant pathology. Topics include causal agents of diseases, symptoms and diagnoses, modes of infections and spread, mechanisms in disease and control, effects of the environment on disease development, and methods of disease control. This course is a prerequisite for more advanced courses in plant pathology. Prerequisite: BIOL 2260 or the former BOTN 2210 (or 001.221).

### 5.1.8 Plant Science Course Descriptions- 4000 Level

**PLNT 4270** Plant Disease Control Cr.Hrs.3  
(Formerly 039.427) Diseases attacking field crops and horticultural plants: recognition of symptoms, methods of prevention, alleviation, and control. Prerequisite: PLNT 2500 (or 039.250) or consent of instructor.

**PLNT 4310** Introductory Plant Genomics Cr.Hrs.3  
An introduction to plant genomics including mapping and sequencing genomes, gene expression and transformation, comparative, functional and integrative genomics; also covers gene constructs and plant transformation and a wide ranging consideration of transgenic crop issues. Theory and practice of genomics will be examined. A laboratory will provide hands on experience with several genomic techniques. Not to be held with the former PLNT 4540 (or 039.454). Prerequisites: [PLNT 2520 (or 039.252) OR BIOL 2500 or the former BOTN 2460 (or 001.246)] and PLNT 2530 (or 039.253) or consent of instructor.

**PLNT 4330** Intermediate Plant Genetics Cr.Hrs.3  
(Formerly 039.433) A study of gene behaviour as related to genetic analyses of data from plant populations; multiple allelic systems and polygenic inheritance of quantitative traits; extra-chromosomal inheritance and the significance of cytoplasmic influence. Examples will be drawn from experimental data where available. Prerequisite: PLNT 2520 (or 039.252) or BIOL 2500 or the former BOTN 2460 (or 001.246).

**PLNT 4380** Plant Science Thesis Cr.Hrs.6  
(Formerly 039.438) An independent research project under the supervision of a staff member. A thesis including a literature review, methods, results and discussion is required. Enrollment limited. Open only to students in their 4th year. Not to be held with SOIL 4080 (or 040.408). Prerequisite: Consent of department head.

**PLNT 4410** Grassland Agriculture: Plant, Animal and Environment Cr.Hrs.3  
(Formerly 039.441) Inter-relationships between the biological components of grassland agriculture as they relate to forage production on the Canadian Prairies. Topics include utilization by wild and domestic animals, plant community relationships and role of forages in multiple land use

planning. This course also offered in Animal Science as ANSC 4410.

**PLNT 4530** Woody Plants in the Prairie Landscape Cr.Hrs.3  
(Formerly 039.453) Classification, identification, ecological characteristics, landscape characteristics and use of native and introduced woody plants found in the prairie landscape. The course will include the preparation of a landscape plan incorporating a selection of the plants studied.

**PLNT 4550** Developmental Plant Biology Cr.Hrs.3  
(Formerly 039.455) An introduction to mechanisms regulating morphogenesis and plant growth and development. Emphasis will be on experimental approaches used to investigate pattern formation at sub cellular, cellular, tissue and organ levels. A heavy tissue culture component in the lab will implement the lecture topics and will provide new insights into ways to study plant development in vitro. Prerequisite: PLNT 3500 (or 039.350)

**PLNT 4560** Secondary Plant Metabolism Cr.Hrs.3  
(Formerly 039.456) An examination of secondary plant metabolism at the biochemical and molecular levels covering chlorophylls and haems, lipids, amino acids, phenolics, terpenes, and alkaloids. Biosynthesis, structure, and function of these metabolites will be put in context of their roles as hormones, plant defense compounds, pharmaceuticals, mitigators of environmental stresses, and regulators of cellular and organ physiology. Not to be held with the former 039.451. Prerequisite: PLNT 3500 (or 039.350) or consent of instructor.

**PLNT 4570** Research Methods in Plant Pathology Cr.Hrs.3  
(Formerly 039.457) Course will provide practical training in plant pathology and will cover plant disease diagnosis, pathogen isolation, identification, inoculation, and storage. Molecular techniques currently used in the study of plant pathogens will be covered. The laboratory component aims at preparing students for a professional career in plant protection and research in plant pathology. Prerequisite: PLNT 3570 (or 039.357) or consent of instructor.

**PLNT 4580** Molecular Plant-Microbe Interactions Cr.Hrs.3  
(Formerly 039.458) Course will cover general principles and mechanisms related to plant-pathogen interactions, such as in gene-to-gene and toxin models. Emphasis will be on biochemical/molecular mechanisms of plant-microbe recognition, pathogenesis, and plant reactions to infections. Both beneficial and deleterious associations will be covered. Prerequisite: PLNT 3570 (or 039.357). This course is offered in alternate years.

**PLNT 4590** Physiology of Crop Plants Cr.Hrs.3  
Concepts dealing with the physiological response of crop plants to the environment from the time of seed germination through to reproduction. Students may not hold credit for PLNT 4590 and the former 039.452. Prerequisites: CHEM 2770 (or 002.277 or MBIO 2770 or 060.277) or CHEM 2360 (or 002.236 or MBIO 2360 or 060.236); PLNT 3500 (or 039.350) or BIOL 2242 (or the former BOTN 2010 or 001.201) and BIOL 3450 (or the former BOTN 2020 or 001.202) or the former 001.230 (PLNT 3500 (or 039.350) recommended).

**PLNT 4600** Issues in Agricultural Biotechnology Cr.Hrs.3  
PLNT 4600 Issues in Agricultural Biotechnology Cr.Hrs.3 By lecture, group discussion, individual/group projects selected



topics related to the introduction and application of modern biotechnologies in agriculture will be examined. Acquiring a critical appreciation of the multidimensional issues associated with the application of biotechnology will be the goal. Students must have completed 84 credit hours towards a degree, or permission of instructor. Prerequisite: PLNT 2530 (or 039.253).

#### **PLNT 4610** Bioinformatics Cr.Hrs.3

An introduction to the theory, strategies, and practice of data management and analysis in molecular biology. Topics include DNA and protein sequence analysis, biological databases, genomic mapping, and analysis of gene expression data. The course will include problem-solving exercises using Unix server-based software. Prerequisites: PLNT 2530 (039.253) or the former 039.450 or PLNT 3140 (039.314) or MBIO 3410 (060.341) or PLNT 4310 or the former PLNT 4540 or consent of instructor.

### **5.1.9 Soil Science Course Descriptions-0**

#### **Level**

#### **SOIL 0420** Soil Productivity and Land Use Cr.Hrs.4

(Formerly 040.042) Soil classification systems; soils of Manitoba and their properties; soil productivity and its maintenance; soil fertility and testing, fertilizer recommendations; environmental concerns. Prerequisite: DAGR 0420 (or 065.042).

#### **SOIL 0620** Soil Conservation and Management Cr.Hrs.4

(Formerly 040.062) Land capability for agriculture; storage, use of water and water use efficiency; saline and alkaline soils; soil acidity; soil erosion and conservation; tillage, cropping systems and rotations; fate of biosolids, pesticides. Prerequisite: SOIL 0420 (or 040.042).

#### **SOIL 0630** Soil Fertility Cr.Hrs.4

(Formerly 040.063) Soil nutrients and their behavior; evaluation of soil fertility including soil testing for precision agriculture; crop response to fertilizers; manufacture, properties, reactions and applications of fertilizer. Prerequisite: SOIL 0420 (or 040.042).

### **5.1.9 Soil Science Course Descriptions-3000**

#### **Level**

#### **SOIL 3060** Introduction to Agrometeorology Cr.Hrs.3

(Formerly 040.306) Basic description and discussion of properties of the atmosphere, radiation, temperature, effect of temperature on plant growth, climate and animal response, water, evapotranspiration, insect adaptation, activity in relation to climate, climatic data.

#### **SOIL 3520** Pesticides: Environment, Economics and Ethics Cr.Hrs.3

(Formerly 040.352) A comprehensive examination of the benefits and risks of pesticide use. Topics include: Characteristics of pesticide products and formulations used in Western Canada; History, practice, successes and failures in the use of pesticides in agriculture; Pesticide use for protecting human health; Pesticide fate processes in air, soil and aquatic environments; Economical and environmental impact of pesticide application drift; Atmospheric pesticide contamination; Pesticide surface and groundwater

contamination; Pesticide toxicity to organisms, including humans; Pesticide residues in food; Pesticide regulations; Pesticide risk indicators; Alternatives to pesticides. Not to be held with 040.411, 038.454 or 040.454.

#### **SOIL 3600** Soils and Landscapes in Our Environment Cr.Hrs.3

(Formerly 040.360) Discover why soil is an essential resource. Explore the roles of soils and landscapes within natural and agricultural ecosystems by learning the fundamental biological, chemical and physical properties and processes; soil and landscape classification and evaluation. Not to be held with 040.350 or 040.351.

#### **SOIL 3610** Field Methods in Land Resource Science Cr.Hrs.3

This course provides students with training in field methods used in soil science and related sciences (hydrology, meteorology, ecology, geomorphology, and environmental science). Students participate in a biophysical survey of a field site and in a study of the management, assessment and monitoring of land resources. Prerequisite: SOIL 3600

### **5.1.9 Soil Science Course Descriptions-4000**

#### **Level**

#### **SOIL 4060** Physical Properties of Soils Cr.Hrs.3

(Formerly 040.406) Physical properties of soils and their relation to plant growth. Topics discussed include particle size distribution, soil water, soil structure, soil temperature, and soil aeration. Prerequisite: SOIL 3600 (or 040.360) or 040.350 or 040.351 or BIOE 2110 or consent of instructor.

#### **SOIL 4080** Soils Thesis Cr.Hrs.6

(Formerly 040.408) The student will prepare a thesis on a problem in soil science. Each student will give two seminars: the first will be a review of literature pertinent to his/her problem; the second, a presentation and interpretation of results of his/her research. Not to be held with PLNT 4380 (or 039.438). Prerequisite: Consent of department head.

#### **SOIL 4130** Soil Chemistry and Mineralogy Cr.Hrs.3

(Formerly 040.413) Composition of soil materials. Reactions of nutrients and contaminants with soil organic matter, silicate clays, oxides and other soil constituents which affect their mobility and bioavailability. Prerequisite: SOIL 3600 (or 040.360) or 040.350 or 040.351 or consent of instructor.

#### **SOIL 4400** SOIL ECOLOGY Cr.Hrs.3

Explore the application of soil biology to diversity in agro ecosystems, response of soil organisms to management, mediation of important environmental issues, and promotion of human health. Appreciate the vast array of soil organisms and their functions in soil ecosystems, understand cycling of nutrients by soil organisms, and discover quantitative methodology in determining soil biochemical processes. The laboratory provides hands-on experience in observing, quantifying and isolating soil organisms and the biochemical processes they conduct. Prerequisite: SOIL 3600 (040.360) or consent of instructor.

#### **SOIL 4500** Remediation of Contaminated Land Cr.Hrs.3

(Formerly 040.450) Physical, chemical and biological approaches to remediation of land including; nature of contaminants, procedures for assessing the extent of the impact, consequences to the environment, approaches to



remediation and case studies of contaminant remediation. Prerequisite: SOIL 3600 (or 040.360) or 040.350 or 040.351 or consent of the instructor.

**SOIL 4510** Soil and Water Management Cr.Hrs.3 (Formerly 040.451) Topics include: capability of land for agriculture; storage, movement and use of water; saline and alkaline soils; soil conservation including erosion; sustainability of soil organic matter; effect and fate of soil amendments. Prerequisite: SOIL 3600 (or 040.360) or 040.350 or 040.351.

**SOIL 4520** Soil Fertility Cr.Hrs.3 (Formerly 040.452) Forms and behaviour of plants nutrients in soil; soil fertility evaluation and management, including fertilizer sources and practices. Prerequisite: SOIL 3600 (or 040.360) or 040.350 or 040.351.

**SOIL 4530** Land Use and Environment Cr.Hrs.3 (Formerly 040.453) Biophysical land classification and management tools; land ratings; effect of land use on environment; policy and legislation effects in land management. Prerequisite: SOIL 3600 (or 040.360) or 040.350 or 040.351.

## 5.2.1 Agriculture/Agricultural Finance

### Course Descriptions

**DAGR 0410** Communication and Learning Skills Cr.Hrs.4 (Formerly 065.041) A course designed to improve learning skills and abilities in written and oral communication.

**DAGR 0420** Introductory Soils and Crops Cr.Hrs.4 (Formerly 065.042) Topics covered will include soil forming factors; soil characteristics, climate, nutrient supply and crop production, biology of crop plants, crop establishment and protection, harvest management, farming systems and crop rotations.

**DAGR 0610** Advanced Communication and Rural Leadership Cr.Hrs.3 (Formerly 065.061) A course designed to improve leadership potential and understanding of the rural community.

**DAGR 0630** Special Project Cr.Hrs.3 (Formerly 065.063) This project allows a student to make practical application of scientific knowledge acquired during the first year and/or to intensify the study of a topic of particular interest. A satisfactory report is required to qualify for credit. Students who intend to register for this course must obtain approval from the Director before the end of their first year.

**DAGR 0660** Special Topics in General Agriculture Cr.Hrs.3 (Formerly 065.066) Selected topics of current interest in General Agriculture. Prerequisite: Written consent of Director of the School of Agriculture.

**DAGR 0680** Management Planning Project 1 Cr.Hrs.3 (Formerly 065.068) Development of an objectives-driven plan that deals with production, personnel, marketing and financial management of a farm or off-farm business. Students may not hold credit for DAGR 0680 (or 065.068) and the former 065.064.

**DAGR 0690** Management Planning Project 2 Cr.Hrs.5 (Formerly 065.069) Refinement of the plan developed in Management Planning Project 1 with emphasis on generating and analyzing a complete set of financial statements for a farm or off-farm business. Presentation of the management plan, in both written and verbal form. On-site visits will be used to illustrate and reinforce management principles and practices and address issues raised in class. Students may not hold credit for DAGR 0690 (or 065.069) and the former 065.065. Prerequisite: DAGR 0680 (or 065.068).

**DAGR 0700** Environmental Farm Plans and On-Farm Food Safety Cr.Hrs.3 (Formerly 065.070) This course examines environmental and food safety concerns and regulations as they relate to farming. Students will develop a Manure Management Plan, an Environmental Farm Plan and will understand HACCP principles.

**DAGR 0710** Agricultural Enterprise Cr.Hrs.3 (Formerly 041.071) On-site visits to various agricultural operations to illustrate and reinforce management principles and practices. Guest lectures will cover topics pertinent to the agricultural industry. Students may not hold credit for DAGR 0710 and DAGR 0690 (or 065.069) or the former 065.065.

**DAGR 0720** Agricultural Industry Cr.Hrs.3 (Formerly 041.072) This course provides students with the opportunity to increase their awareness of agriculture and the agri-business sector. The following will be emphasized: agriculture in other parts of the world, humane livestock practices, marketing of agricultural products, production of agricultural products for niche markets, and trade show. Students may not hold credit for DAGR 0720 and DAGR 0690 (or 065.069) or the former 065.065.

**DAGR 0730** Case Studies in Institutional Lending 1 Cr.Hrs.4 (Formerly 041.073) Case studies will provide a primary look at assessing loan applications and determining financial need, production feasibility and repayment. Students will analyze lending portfolios and the management of various enterprises. Prerequisite: ABIZ 0470 (or 061.047). Pre- or Co requisite: ABIZ 0450 (or 061.045).

**DAGR 0740** Case Studies in Institutional Lending 2 Cr.Hrs.4 (Formerly 041.074) This course is a continuation of Case Studies in Institutional Lending 1, and will examine and analyze more applications and financial statements of agricultural operations. Prerequisite: DAGR 0730 (or 041.073).

**DAGR 0750** Money and Banking Cr.Hrs.3 (Formerly 041.075) Introduction to various financial institutions and the services they provide. Also, students will study interest rate determination, the Bank Act and money markets. This course is designed to provide an overview of the program of study in the Agricultural Finance option.

**DAGR 0760** Agricultural Law Cr.Hrs.3 (Formerly 041.076) Discussion of the complexity of the agriculture industry and the laws affecting it. The course will illustrate laws critical for effective planning and the making of sound management decisions respecting the farm operations and agribusinesses. Topics include the Manitoba and Canadian legal systems, major laws affecting



agriculture, and resolution of issues in Canadian agriculture. Offered in 2005-2006 and alternate years thereafter.

**DAGR 0770** Tax Cr.Hrs.2

(Formerly 041.077) Examination of specific farm and agribusiness tax laws and filing procedures. Tax management strategies will also be discussed.

**DAGR 0780** Succession and Estate Planning Cr.Hrs.2

(Formerly 041.078) An in-depth look at the legal requirements necessary for asset transfer and farm continuity. Topics include wills, asset divisions, tax planning, savings and opportunities.

**DAGR 0790** Asset Appraisal Cr.Hrs.3

(Formerly 041.079) To learn the principles and concepts as they relate to the valuation of farm property, specifically, the process for various methods of appraisal of farm assets.

**DAGR 0800** Intercultural Communications Cr.Hrs.2

(Formerly 041.080) A course designed to introduce written and verbal communication in a multicultural environment. Offered in 2006-2007 and alternate years thereafter.

**DAGR 0810** Public Relations Cr.Hrs.2

(Formerly 041.081) Identification of and interaction with various public within an organization or business. Enhanced written and verbal communications. Offered in 2006-2007 and alternate years thereafter.

**DAGR 0820** Business Writing Cr.Hrs.2

(Formerly 041.082) A course designed to enhance written business communications skills. Prerequisite: DAGR 0410 (or 065.041).

**DAGR 0830** Agriculture Cooperative Education Work Term Cr.Hrs.2

Special five-month work assignment in business, industry, government or research for cooperative education students in the diploma program. Requires submission of a written report covering the work completed during the professional assignment.



## Faculty of Architecture

**Dean:** Ralph Stern

**Associate Dean(s):** Academic: Marcella Eaton Research: Mary Anne Beecher

**Campus Address/General Office:** 201 Russell Building

**Telephone:** (204) 474 9386

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**Email Address:**

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**Website:**

[umanitoba.ca/architecture](http://umanitoba.ca/architecture)

**Academic Staff:**

Please refer to the Faculty website at

[umanitoba.ca/architecture](http://umanitoba.ca/architecture)

### General Information

Introduction to the Faculty of Architecture, The teaching of architecture began in 1913 as a four-year degree program within the Faculty of Arts. In 1920 the program became a part of the newly established Faculty of Engineering and Architecture. In 1938 a three year diploma program in interior decoration was established. In 1945 the departments of Architecture and Interior Decoration were combined in the School of Architecture and Fine Arts. In 1948 the entire school was reorganized as the School of Architecture. The professional architecture degree became a five year program; and a new four year Bachelor of Interior Design degree was also introduced. In 1949 a one year graduate program in Community Planning was established. In 1957 the Manitoba Legislature approved a grant for the construction of a building for the School of Architecture, the first in Canada to be designed exclusively for architecture education. In 1963 the school was reconstituted as the Faculty of Architecture and a two-year graduate program leading to the degree, Master of City Planning, was introduced.

In 1966 the curriculum in Architecture was reorganized so that the degree, Bachelor of Environmental Studies, became the prerequisite for the professional programs in Architecture and Landscape Architecture. This was followed in 1970 with a new curriculum leading to the professional degree, Master of Architecture, and two years later with new curriculum leading to a Master of Landscape Architecture. In 1990 an admissions year of 30 credit hours of Arts and Sciences courses became a prerequisite for entry into Environmental Design.

In 1998 the Bachelor of Environmental Design (B.Env.D.) became an undergraduate program consisting of two years of shared design studies followed by a third year in one of the 'professional options'. These options included Architecture, City Planning, Interior Design, and Landscape Architecture. University 1 was introduced as a prerequisite for admission to the Environmental Design Program. In 2006 the Faculty of Architecture began to reform the

Environmental Design Program to create a four year undergraduate design program by including University 1 in its curriculum offerings. In 2007 the Faculty of Architecture introduced a four year design program consisting of two years of common 'Foundation Studies' (ED1/U1 and ED2) followed by two years of pre-professional 'Intermediate Studies' years (ED3 and ED4). The third and fourth years are referred to as the 'Option Years' and include Architecture, Interior Environments and Landscape + Urbanism (a shared option between City Planning and Landscape Architecture).

The B.Env.D. program is envisioned as a strong multidisciplinary undergraduate degree in its own right. It provides a solid base of design education for students intending to pursue careers and/or graduate studies in a wide variety of disciplines, including the Faculty's Master's degrees in Architecture, City Planning, Interior Design and Landscape Architecture, and at other institutions globally.

## Chapter Contents

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- 2.2 Bachelor of Environmental Design Degree Architecture Masters Preparation Program Admission Requirements

### SECTION 3: Faculty Academic Regulations

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- 4.2 Bachelor of Environmental Design Architecture Masters Preparation Program

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- 5.1 Bachelor of Environmental Design

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Masters Preparation Program**SECTION 1: Degree Programs Offered**

Program/Degree	*Years to Complete	Total Credit Hours
Bachelor of Environmental Design	4	129
Bachelor of Environmental Design AMP (does not require the completion of University 1)	2	66

**Available Options**

Effective September 2008, the Bachelor of Environmental Design Degree Program has been reformed to require students to declare a specific program Option after the second year of studies (ED2) in the Environmental Design Program. Of the approximately 100 students moving into the third year of studies (ED3), admission into the Options will be divided equally. Students will be required to rank their program options in order of preference (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> choice). The selection of students into these Options will be based on the GPA, a Portfolio and Statement of Intent. Students entering the program should be aware that entry into the Options will be assigned on a competitive basis, and that not all students may be successfully placed in their first choice. Students who have not completed 2<sup>nd</sup> year studios or who still have more than 1 three credit hour lecture course to complete will not be eligible for admission into the Option years.

**Architecture Option**

The Architecture Option offers a program of studies that focuses on transforming the lessons of history, technology, culture, the environment, and regional and social aspirations into a program for architecture. Students have the academic freedom, one of the program's highlights, to experiment with ideas and methods as they develop their own personal and critical approaches to architectural design. The sequential design studios and supporting courses cover a wide spectrum of investigations ranging in scale from urban design to individual buildings to their construction details, examining the impact of all of these on the environment.

**Interior Environments Option (not available to AMP students)**

The Interior Environments Option provides an opportunity to study the design of interior spaces within the context of architecture and to investigate the design of objects within the contexts of the human body and interior spaces. Students enrol in a series of design studios and courses to explore the impact of interior environments on human beings and vice versa. The impact of technology – especially sustainable strategies – on buildings and their inhabitants is also studied.

**Landscape + Urbanism Option (not available to AMP students)**

The departments of Landscape Architecture and City Planning offer a joint option in Landscape + Urbanism for students who have a broad interest in understanding and shaping human settlement and habitat. Design studios and supporting courses recognize that we live in an increasingly globalized world where issues of natural resource depletion, climate change and the demand for sustainable development are paramount. Design and planning issues are addressed within the social, economic, and political contexts that drive development and of the cultural and ecological forces that create the built environment.

**Available Streams (only available to AMP students)**

AMP students entering either Stream One or Stream Two of the program will enter into the Architecture Option years three (AMP 1's) or four (AMP 2's) as outlined above.

**SECTION 2: Admission Requirements****2.1 Bachelor of Environmental Design (B.Env.D),**

To be considered for admission into the Bachelor of Environmental Design Program an applicant must have completed 30 credit hours of university-level coursework with an overall minimum adjusted grade point average of 2.50. For a detailed outline of the admission requirements please see our web site at [umanitoba.ca/environmentaldesign](http://umanitoba.ca/environmentaldesign).

**2.2 Bachelor of Environmental Design - Architecture Masters Preparation Program (AMP),**

Enrollment in the Environmental Design Masters Preparation Program is competitive and limited. Students will be admitted on the basis of an annual selection process. Applicants satisfying the minimum academic requirements are eligible for consideration at the discretion of the Department of Architecture Admissions Selection Committee. For a detailed list of the admission requirements please see our web site at [umanitoba.ca/architecture](http://umanitoba.ca/architecture).

**SECTION 3: Faculty Academic Regulations****3.1 Undergraduate Scholastic Standards,**

A Grade Point Average (GPA) of 2.00 is required as an acceptable standard of performance.

A minimum grade of 'C' is required to pass all courses offered by the Environmental Design Program and by the Departments within the Faculty. All courses offered by the



Environmental Design Program stipulate a grade of “C” in the prerequisite course(s).

To be eligible for the degree of Bachelor of Environmental Design a student is required to complete a minimum of two full academic years of studies in the Environmental Design Program including Years 3 and 4.

**3.2 Supplementary Regulations,**

Special regulations governing admission, attendance, withdrawals, examinations, grading procedures and curriculum requirements are on file in the general office of the Environmental Design Program, Faculty of Architecture.

**3.3 Dean’s Honour List,**

Students who achieve a term GPA of 4.0 or better, while registered in 80 per cent of a full course load will be included in the Dean’s Honour List for the Faculty of Architecture.

**SECTION 4: Program and Graduation Requirements**

**4.1 Bachelor of Environmental Design**

The Bachelor of Environmental Design Degree is a four year program of studies consisting of two years of common ‘Foundation Studies’ (ED1/U1 and ED2) followed by two years of ‘pre-professional ‘Intermediate Studies’ (ED3 and ED4). The third and fourth years are referred to as the ‘Option Years’ and include Architecture, Interior Environments and Landscape + Urbanism (a shared option between City Planning and Landscape Architecture). Typically students entering the Environmental Design Program are admitted after completion of the admission requirements.

			Foundation Studies		
Apply to University 1			ED1 / U1		
Apply to Environmental Design Program			ED2		
			Intermediate Studies (Option Years)		
Apply to Option	ED 3 Arch Option	or	ED 3 IE Option	or	ED 3 L + U Option
	ED 4 Arch Option	or	ED 4 IE Option	or	ED 4 L + U Option

The Foundation Studies of the Environmental Design Program provide a solid grounding in the basic knowledge and language shared by all of the environmental design disciplines. It also provides opportunity to develop interdisciplinary perspectives through the other academic units in the University of Manitoba. Students come to understand the holistic nature of environmental design and, at an early stage, begin to establish a rich and multidisciplinary dialogue with their peers in the Faculty of Architecture. It also enables students to discover their strengths and interests relating to a particular environmental design discipline.

The Intermediate Studies of the Environmental Design Program provide opportunities to pursue a specific professional design discipline including Architecture, City Planning, Interior Design and Landscape Architecture. The third and fourth years are spent studying in the Option Years where students are exposed to, and challenged by, academic and professional design theories and practices specific to a particular design discipline.

Overall, the curriculum is structured around a design studio sequence that provides a forum for exploring the complex

relationships between humans and the natural and built environments that constitute the places and artifacts of cultural production. Over a four year period, a student will develop the necessary knowledge and skills to pursue work in a wide variety of design practices.

The professional options are an important curriculum link to the graduate programs. Students holding a B.Env.D degree are eligible to apply to the graduate departments of Architecture, City Planning, Interior Design and Landscape Architecture and to other graduate programs globally. Students who have completed a design degree may be eligible to apply to the graduate program. Interested students should consult the [Graduate Calendar, Faculty of Architecture](#).

In order to be eligible for the Bachelor of Environmental Design Degree students must complete ED2, ED3 and ED4 (total 99 credit hours). Admission enrollment is limited to 100 students on a competitive basis.



**Course Sequence**

**Year 1/Admissions Requirement**

<b>Course No.</b>	<b>Credit Hours</b>
EVDS 1600 Introduction to Environmental Design	3
EVDS 1602 Visual Literacy	3
EVDS 1660 History of Culture, Ideas and Environment 1	3
EVDS 1670 History of Culture, Ideas and Environment 2	3
Faculty of Arts	3
Faculty of Arts	3
Faculty of Science	3
Faculty of Science	3
Faculty of Arts or Science	3
Faculty of Arts or Science	3
<b>Total Credit Hours</b>	<b>30</b>

**Year 2**

EVDS 2100 Urban Media Lab (Pre-Fall)	3
EVDS 2600 Tectonic Precedent	3
EVDS 2200 Ecology and Design	3
EVDS 2300 Materials, Structures and Assemblies	3
EVDS 2702 Natural and Human Systems	3
EVDS 2400 Visual Media 1	3
EVDS 2800 Visual Media 2	3
EVDS 2500 Design Studio 1	6
EVDS 2900 Design Studio 2	6
<b>Total Credit Hours</b>	<b>33</b>

**INTERMEDIATE STUDIES (Option Years 3 and 4)**

**Year 3: Architecture Option**

EVAR 3000 Pre-Modern Architectural History and Theory 1	3
EVAR 3002 Pre-Modern Architectural History and Theory 2	3
EVAR 3004 Architectural Technology 1- Structural and Sustainable Use of Materials	3
EVAR 3006 Architectural Technology 2 – Building Construction, Structures and Envelopes	3
EVAR 3008 Architecture Design Studio 1	9
EVAR 3010 Architecture Design Studio 2	9
EVAR 3014 Drawing: Freehand & Digital	3
<b>Total Credit Hours</b>	<b>33</b>

**Year 4: Architecture Option**

EVAR 4000 Modern Architectural History and Theory 1	3
EVAR 4006 Modern Architectural History and Theory 2	3
EVAR 4002 Architectural Technology 3 - Building Systems	3
EVAR 4008 Architectural Technology 4 - Comprehensive Design Technology Report	3
EVAR 4004 Architecture Design Studio 3	9
EVAR 4010 Architecture Design Studio 4	9
Elective	3
<b>Total Credit Hours</b>	<b>33</b>

**Year 3: Interior Environments Option**

EVIE 3002 Interior Design History and Theory 1	3
EVIE 3004 Materials, Assemblies and Detailing	3
EVIE 3006 Interior Design Media	3
EVIE 3008 Interior Design Studio 3.1	6
EVIE 3010 Interior Design Studio 3.2	6
EVIE 3012 Interior Light and Colour	3
EVIE 3014 Human Factors and Environmental Experience	3
EVIE 3016 Topics in Interior Design or Elective	3
EVIE 4000 Interior Design History and Theory 2	3
<b>Total Credit Hours</b>	<b>33</b>

**Year 4: Interior Environments Option**

EVIE 3016 Topics in Interior Design or Elective*	3
EVIE 4002 Indoor Systems 1	3
EVIE 4004 Indoor Systems 2	3
EVIE 4006 Design Methods and Processes	3
EVIE 4008 Digital Media	3



EVIE 4010 Interior Design Studio 4.1	6
EVIE 4012 Interior Design Studio 4.2	6
EVIE 4014 Advanced Interior Design Media	3
Elective*	3
Total Credit Hours	33

\*Please note: All students in 4th Year IE Option must do 6 credit hours of Elective courses. EVIE 3016 can be used as three hours towards this requirement

**Year 3: Landscape + Urbanism Option**

EVLU 3000 History of Designed Environments	3
EVLU 3002 Site Planning	3
EVLU 3004 Ecology + Design 2	3
EVLU 3006 Studio 3: Dwelling / Precinct / Everyday Life	9
EVLU 3008 Studio 4: Networks and Infrastructure	9
EVLU 3010 Landscape + Urbanism Theory	3
EVLU 3012 Site Morphology and Grading	3
Total Credit Hours	33

**Year 4: Landscape + Urbanism Option**

EVLU 4000 Philosophy, Ethics and Aesthetics	3
EVLU 4002 Construction Materials (Alternate 1)*	3
EVLU 4004 Inquiry by Design (Alternate 2)* - not offered	3
EVLU 4006 Special Topics in Community Design (Alternate 3)*	3
EVLU 4008 Plants, Ecosystems and Design (Alternate 4)*	3
EVLU 4010 Community Design Process and Method (Alternate 5)*	3
EVLU 4012 Studio 5: Possible Urbanism(s)	9
EVLU 4014 Studio 6: Emergent Futures	9
EVLU 4016 History of Landscape + Urbanism	3
EVLU 4018 Principles of Urban Design	3
Total Credit Hours	33

Students who intend on pursuing graduate studies in Landscape Architecture at the University of Manitoba should complete EVLU 4002 Construction Materials and EVLU 4008 Plants, Ecosystems and Design in their 4th year

**Electives**

University credit courses may be taken as electives. They may come from the Faculties of Arts, Science, Engineering, Fine Arts, Management, Agricultural and Food Sciences among others, or with the permission of the Environmental Design Program Chair in special circumstances.

The Environmental Design Program has revised its mandatory computer purchase policy for all students entering Year 2 of the Environmental Design Program, beginning September 2008. Please refer to the Environmental Design website to note laptop computer and software specifications.

**Supplies and Expenses**

The Faculty of Architecture has introduced an Information Technology Program Fee of \$400.00 for all enrolling students. The Information Technology Program Fee includes \$100.00 to go to a technology endowment fund. Remaining funds will be expended on current technology items of direct benefit to students.

The Environmental Design Program has introduced the Urban Media Lab Fee of \$330.00 (replacing the Sketch Camp fee). The Urban Media Lab course is offered in Year 2 and is hosted off campus in advance of the regular academic session (late August to early September).

In addition to tuition, student fees, and related expenses, the estimated cost of materials, equipment, and textbooks for students in Environmental Design is approximately \$7,000 per year.

For information about professional studies leading to the degrees of Master of Architecture, Master of City Planning, Master of Interior Design and Master of Landscape Architecture, please refer to the [Graduate Calendar](#).

The Environmental Design Program offers Field Studies in Years 2, 3 and 4 either as stand alone courses or in conjunction with a design studio offering. These may be regional, national or international. All related costs are to be borne by the students. A valid passport is required. A visa may also be required.

**4.2 Bachelor of Environmental Design - Architecture Masters Preparation Program (AMP)**

**4.2 Bachelor of Environmental Design Architecture Masters Preparation Program (AMP 1 and AMP 2),**



This program is for applicants who have a recognized three or four year undergraduate degree in either a non-design discipline (such as Fine Art, Engineering, Science, Philosophy, Theatre, Psychology, Music, Film, English, History, Art History, Urban Studies, Geography, Commerce, etc)

OR

a design-related discipline (such as Interior Design, Landscape Architecture, Industrial Design, etc.) and wish to eventually apply to the graduate Master of Architecture Program.

**General Eligibility:** All applicants must meet the general admission and entrance requirements set by the Department of Architecture. The entry level into the program will be determined by the Department of Architecture Admissions Committee's evaluation of the individual's application and supporting documents.

**Architecture Masters Preparation One (AMP 1):** (For those with a background in one of the following: Fine Art, Industrial Design, Engineering, Science, Philosophy, Theatre, Psychology, Music, Film, English, History, Art History, Urban Studies, Geography, Commerce, etc.) For applicants who have little or no formal design education with a minimum three-year undergraduate bachelors degree in any disciplinary field from a recognized college or university. A minimum GPA of 3.0 or equivalent B in the last two full years (60 credit hours) of study is required. Upon successful completion of this two-year program students will be eligible to receive an Environmental Design undergraduate degree.

**Architecture Masters Preparation Two (AMP 2):** (For those with a background in one of the following: Interior Design, Interior Architecture or Landscape Architecture) For applicants who already have a three or four-year undergraduate bachelors degree in a design-of-the-environment related field from a recognized college or university. A minimum GPA of 3.0 or equivalent B in the last two full years (60 credit hours) of study is required. These applicants are considered on a case-by-case basis for placement into the second and final year of the undergraduate Architecture Masters Preparation undergraduate Program but will be ineligible to receive the Environmental Design degree.

**NOTE:** Upon successful completion of the Architecture Masters Preparation undergraduate Program (AMP 1 and AMP 2), students who wish to continue into the Master of Architecture Program must officially apply for graduate admissions. Evaluation is based on the student's progress in either the one or two-year Architecture Masters Preparation Program, as evidenced in a portfolio submission, GPA and a Faculty of Graduate Studies application.

Please refer to the following for Architecture Masters Preparation (AMP) Information and Application Package:

[http://umanitoba.ca/faculties/architecture/media/AR\\_2012\\_A\\_MP\\_apppqinfobulletin.pdf](http://umanitoba.ca/faculties/architecture/media/AR_2012_A_MP_apppqinfobulletin.pdf)

**Course Sequence**

EVAR 3012 Arch Tech Prep (pre term block course)

3

**Year 3**

EVAR 3000 Pre-Modern Architectural History and Theory 1

3

EVAR 3002 Pre-Modern Architectural History and Theory 2

3

EVAR 3004 Architectural Technology 1 - Structural and Sustainable use of Materials

3

EVAR 3006 Architectural Technology 2 - Building

3

Construction, Structures and Envelopes

EVAR 3008 Architecture Design Studio 1

9

EVAR 3010 Architecture Design Studio 2

9

EVAR 3014 Drawing: Freehand & Digital

3

Total Credit Hours

33

**Year 4**

EVAR 4000 Modern Architectural History and Theory 1

3

EVAR 4006 Modern Architectural History and Theory 2

3

EVAR 4002 Architectural Technology 3 – Building Systems

3

EVAR 4008 Architectural Technology 4 – Comprehensive

3

Technology Report

EVAR 4004 Architecture Design Studio 3

9

EVAR 4010 Architecture Design Studio 4

9

Elective

3

Total Credit Hours

33

**Electives**

University credit courses may be taken as electives. They may come from the Faculties of Arts, Science, Engineering, Fine Arts, Management, Agricultural and Food Sciences among others, or with the permission of the Department of Architecture in special circumstances.

**Supplies and Expenses**

The Faculty of Architecture has introduced an Information Technology Program Fee of \$400.00 for all enrolling students. The Information Technology Program Fee includes \$100.00 to go to a technology endowment fund. Remaining funds will be expended on current technology items of direct benefit to students.



The Faculty of Architecture offers Field Studies in Years 3 and 4 either as stand alone courses or in conjunction with a design studio offering. These may be regional, national or international. All related costs are to be borne by the students. A valid passport is required. Visas may also be required.

The Faculty of Architecture has revised its mandatory computer purchase policy for all enrolling students beginning September 2008. Please refer to the Faculty of Architecture website to note laptop computer and software specifications.

In addition to tuition, student fees, and related expenses, the estimated cost of materials, equipment, and textbooks for students in Environmental Design After Degree is approximately \$7,000 per year.

## SECTION 5: Environmental Design Architecture Course Descriptions-3000

### Level

**EVAR 3000** Pre-Modern Architectural History and Theory I Cr.Hrs.3

Provides a historical and theoretical understanding of early Greek, Roman, Gothic and non-western architectural topics and their influence. Content is explored using primary texts where possible, and through critical analysis of selected topics. May not be held for credit with the former EVDS 2690, EVDS 2610, ARCH 6320 or ARCH 6420.

**EVAR 3002** Pre-Modern Architectural History and Theory II Cr.Hrs.3

Provides a historical and theoretical understanding of Gothic and Renaissance architectural topics and their influence, up to the work of Claude Perrault. Content is explored using primary texts where possible, and through critical analysis of selected topics. May not be held for credit with EVDS 2620 or ARCH 6340.

**EVAR 3004** ARCH TECH 1 Cr.Hrs.3

Construction materials and structural theory in the analysis and design of simple wood-frame, masonry and light steel construction; fundamental passive energy systems and design strategies for material and energy reduction. May not be held for credit with EVDS 1690 or ARCH 6480.

**EVAR 3006** Architectural Technology 2-Building Construction, Structures & Envelopes Cr.Hrs.3

Architectural, environmental and technical aspects of construction focusing on low-rise and medium sized wood, steel and masonry construction including issues of material production/manufacturing, soils, foundation, envelope systems, basic mechanical systems and their integration and acoustic concerns. May not be held for credit with the former EVDS 2670, EVDS 2700, ARCH 6520 or ARCH 6530

**EVAR 3008** Architecture Design Studio 1 Cr.Hrs.9

An architectural study of the human condition in relation to the natural and built environment through design oriented research exploration, analysis, evaluation and interpretation

of a selected subject of inquiry. Various ways of seeing and making are applied as tools for critical thinking to align content with modes of representation. May not be held for credit with former EVDS 2630 or ARCH 6380.

**EVAR 3010** Architecture Design Studio 2 Cr.Hrs.9

Building upon first term explorations, architectural propositions are developed that seek to clarify relations between human inhabitation and the physical environment in a regional context. Design principles influenced by programmatic, theoretical, historical, technological material and environmental criteria are examined. Prerequisite: EVAR 3008. May not be held for credit with former EVDS 2640 or ARCH 6390.

**EVAR 3012** Architecture Technology Preparation: Structural Concepts Cr.Hrs.3

A preparatory block course introducing the fundamentals of structural concepts in architecture that prepares students for the foundation technology courses in architecture. May not be held for credit with EVDS 2300 (or former EVDS 1690), EVDS 1700 or ARCH 6480.

**EVAR 3014** Drawing: Freehand/Digital Cr.Hrs.3

An introduction to drawing skills that allows students to become articulate in proposing and studying architecture through drawing. The course covers a range of media. May not be held for credit with the former ARCH 6532 or ARCH 6370

## SECTION 5: Environmental Design Architecture Course Descriptions-4000

### Level

**EVAR 4000** Modern Architectural History and Theory I Cr.Hrs.3

Provides a historical and theoretical understanding of the origins of modernity in architecture. Content is explored using primary texts where possible, and through critical analysis of selected topics. May not be held for credit with former EVAR 3700, EVAR 3470, ARCH 6460 or ARCH 6450.

**EVAR 4002** Architectural Technology 3-Building Systems Cr.Hrs.3

Integrated building systems focusing on multi-story steel and concrete construction including: passive and active heating, cooling, and ventilation methods, strategies and designs, electrical, water, communication, security, fire protection, and vertical transportation systems; and building code constraints. May not be held for credit with the former EVAR 3560, EVAR 3570, ARCH 6500 or ARCH 6510.

**EVAR 4004** Architecture Design Studio 3 Cr.Hrs.9

This studio focuses on the broader cultural implications of social interaction and the collective inhabitation of the built and natural environments. Architecture design explorations are influenced by a thorough examination of programmatic, theoretical, historical, technological, material and environmental criteria. May not be held for credit with the former EVAR 3680 or ARCH 6400

**EVAR 4006** Modern Architectural History and Theory II Cr.Hrs.3

Provides an historical and theoretical understanding of 20th



century topics in architecture (western and non-western). Content is explored using primary texts where possible, and through critical analysis of selected topics. May not be held with the former EVAR 3330, EVAR 3480, ARCH 6440 or ARCH 6470.

**EVAR 4008** Arch Tech 4: Comprehensive Design Technology Report Cr.Hrs.3

A technical knowledge project-based course integrating with Arch Studio 4. Comprehensive technology issues include: site; material; energy; structures; construction; sustainability; environmental factors; building code; life safety. Student's work will include analysis, technical drawings and calculations. Corequisite: EVAR 4010 Arch Studio 4

**EVAR 4010** Architecture Design Studio 4 Cr.Hrs.9

The previous terms investigations are further developed and synthesized into a comprehensively designed environment. Architectural propositions seek to clarify specific relations between details and the overall design, through the integration of complex social, cultural, programmatic, theoretical, historical, technological, material and environmental principles, systems and criteria. Prerequisite: EVAR 4004 Architecture Design Studio 3. May not be held with the former EVAR 3690 or ARCH 6410. Corequisite: EVAR 4008 Arch Tech 4.

## SECTION 5: Environmental Design Course Descriptions-1000 Level

**EVDS 1600** Introduction to Environmental Design Cr.Hrs.3 (Formerly 079.160) An introduction to the philosophy and pragmatics of design and designing processes and methods. The focus will be on design as a creative, aesthetic and scientific endeavor, and will examine the challenges and roles of environmental designers in society. Available to non-Environmental Design students only.

**EVDS 1602** Visual Literacy Cr.Hrs.3

This course examines the contemporary visual environment, its critical historical influences, and more recent cultural impacts. Optics, the structure of images, and the importance of materiality will be examined through various modes of cultural production including emerging media and information networks.

**EVDS 1660** History of Culture, Ideas and Environment 1 Cr.Hrs.3

(Formerly 079.166) A brief history of the western creative imagination, part 1. Interdisciplinary survey of cultural periods and key works from the Foundations of Civilization to the Enlightenment, including literary readings, film screenings, and illustrated lectures and discussions. Available to non-Environmental Design students only.

**EVDS 1670** History of Culture, Ideas and Environment 2 Cr.Hrs.3

(Formerly 079.167) A brief history of the western creative imagination, part 2. Interdisciplinary survey of cultural periods and key works from the 19th to the 21st centuries, including literary readings, film screenings, and illustrated lectures and discussion. Prerequisite: EVDS 1660 (or 079.166). Available to non-Environmental Design students only.

**EVDS 1680** Environmental Technology Cr.Hrs.3 (Formerly 079.168) An examination of the scientific principles embodied in the natural laws which govern the science of building, landscape and environmental design in the context of sustainable development. Factors of climate, geology and natural resource systems are introduced. Co requisite: EVDS 1630.

## SECTION 5: Environmental Design Course Descriptions-2000 Level

**EVDS 2100** Urban Media Lab Cr.Hrs.3

An introduction to visual methods of representation and related media including drawing, photography and video. The intention is to critically engage the urban and suburban contexts as a laboratory for investigating cultural values, aesthetic issues, design principles, and representational techniques, 'prerequisite' to undertaking design studio work.

**EVDS 2200** Ecology and Design Cr.Hrs.3

An examination of principles of Ecology and Design works in which these tenets are considered, engaged, and/or demonstrated. Topics fundamental to the science of Ecology will theoretically structure the course content. Emphasis will be placed on understanding the forces and systems working within and between natural, social and human environments.

**EVDS 2300** Materials, Structures and Assemblies Cr.Hrs.3

This course provides an introduction to applied statics, construction materials and construction system assemblies for landscape, building, and interior constructions. Construction material properties and applications, including impacts on resource depletion and on sustainable building practices will be introduced along with basic strategies and methods to analyze and calculate forces in simple structures.

**EVDS 2400** Visual Media 1 Cr.Hrs.3

An introduction to technical and free-hand drawing processes and techniques, and in various media - to develop, to express, and to communicate design intentions. The focus will be directed to abstract and concrete methods of representation. Emphasis will be placed on the integral relationship between thinking, drawing, and making in relation to critically observing the world at large, and in relation to design studio work.

**EVDS 2500** Design Studio 1 Cr.Hrs.6

Introduction to the elements and principles of visual and spatial design, design process and techniques, requisite methods of representation and communication, and design intentions. Studio work will explore different ways of space and form-making, beginning at the site of the body, in both abstract and environmental contexts.

**EVDS 2600** Tectonic Precedent Cr.Hrs.3

An examination of seminal built works of environmental design, at a range of scales, from the 19th and 20th centuries, with an emphasis on examples that are representative of diverse positions of key issues in contemporary design practice. Methodologically, this course endeavours to critically evaluate the relationships between perception, intention, and making through the exploration of the material and tectonic nature of the work(s).



**EVDS 2690** Design Since 1800 Cr.Hrs.3  
(Formerly 079.269) An examination of key architectural treatises of the 19th and 20th centuries that are representative of the predominant ideals of their time and the influence they have had in the construction of the built environment. Pre-requisite EVDS 1670 (or 079.167)

**EVDS 2702** Natural and Human Systems Cr.Hrs.3  
An application of the scientific principles embodied in the natural laws which govern environmental design. Aspects of the bio-physical factors, energy, human physiology and perception, comfort, and resource management are reviewed in the context of sustainable planning and design practices.

**EVDS 2800** Visual Media 2 Cr.Hrs.3  
This course bridges technical and freehand drawing introduced in Visual Media 1, with computer/digital media. This course advances contemporary digital media in relation to emerging modes of 2, 3, and 4 dimensional modes of representation, in the context of design studio work, and in relation to graphic standards associated with professional design practice.

**EVDS 2900** Design Studio 2 Cr.Hrs.6  
An exploration of the fundamental relationships between space, form and order in the context of the built environment, from body to place. Pedagogical emphasis will be directed towards design process, cultural intentions, and environmental accountability.

## SECTION 5: Environmental Design Course Descriptions-3000 Level

**EVDS 3250** Advanced Computing in Environmental Design Cr.Hrs.3  
(Formerly 079.325) Advanced Computing in Environmental Design builds upon skills obtained in the introductory course. The advanced course provides an opportunity for students to explore detailed applications of computational technologies in design & planning. Prerequisite EVDS 2800 or EVDS 2650 (079.265).

**EVDS 3710** Special Topics Cr.Hrs.3  
(Formerly 079.371) Independent study related to environmental design. Content may vary according to the interest of the community, students, profession, and the faculty. Written consent of the instructor(s) and program coordinator required.

**EVDS 3740** Introduction to AutoCad in Design Cr.Hrs.3  
(Formerly 079.374) The course will familiarize the student with the AutoCad program. The course content begins at an introductory level and will progress to a level which will prepare the student for work within a professional office. The course will explore the use of AutoCad for the creation of presentation drawings as well as working drawings. Prerequisite: EVDS 2800 or ARCH 6370 or written permission of Instructor.

## SECTION 5: Environmental Design Interior Environment Course Descriptions-3000 Level

**EVIE 3000** Field Studies Cr.Hrs.3  
This course introduces students to the field of Interior Design through firsthand experience and study of innovative and significant examples of historic and contemporary work from interior design and related fields, in a major design center. The course consists of lectures and a field trip. Location may vary from year to year.

**EVIE 3002** Interior Design History and Theory 1 Cr.Hrs.3  
Examination of concepts, theories and writings related to the development of Interior Design as a discipline, to Modernism. Not to be held for credit with the former EVIE 3650.

**EVIE 3004** Materials, Assemblies and Detailing Cr.Hrs.3  
Workshop and lecture course on materials, joinery and invention. Review of the principles of framing, bracing, and tension applied to casegoods and furniture; exploration of a variety of soft and hard materials and constructions with an emphasis on sustainability. Not to be held for credit with the former EVIE 3630. Prerequisite: EVDS 2200.

**EVIE 3006** Interior Design Media Cr.Hrs.3  
This course develops a student's ability to use drawing as a reflective, problem-solving, designing and visual communication tool; interfaces with digital photography; figure drawing, techniques for representing volume, depth and scale, and interfaces with digital photography and media are focus.

**EVIE 3008** Interior Design Studio 3.1 Cr.Hrs.6  
Interior Design studio exploring the body as the primary reference in design, and the semantic and cultural meanings of objects and architectural elements as mediators of space. Integration of drawing, design and making through projects.

**EVIE 3010** Interior Design Studio 3.2 Cr.Hrs.6  
An in-depth investigation, by design, of the nature of interiors including the physical and perceptual, spatial elements and order, human involvement and experience. Exploration and development of spatial solutions using a variety of visual media. Not to be held for credit with the former EVIE 3680.

**EVIE 3012** Interior Light and Colour Cr.Hrs.3  
This course examines interior lighting and colour theories and concepts emphasizing human and ecological issues, exploration of spatial design strategies and practices. Not to be held for credit with the former EVIE 3610.

**EVIE 3014** Human Factors and Environmental Experience Cr.Hrs.3  
Theoretical and practical issues related to human characteristics, needs, behaviours, and interactions with and within the built interior environment.

**EVIE 3016** Topics in Interior Design Cr.Hrs.3  
This course will explore topics at the cutting edge of interior design, examining political, economic, sociological and technological influences on current and future directions in interior design; examination of current research, writing,



projects and works from related and diverse fields.

**EVIE 3670** Digital Design Media Cr.Hrs.3  
(Formerly 079.367) An intermediate level computer applications elective focused on design, representation and communications. Specific course content to be determined by the areas of specialization available to the faculty and department on a yearly basis. Pre-requisite EVDS 2650 (or 079.265).

**EVIE 3680** Design Studio 5 Cr.Hrs.6  
(Formerly 079.368) Arch., C.P.: Studies in the principles, vocabularies and methods of approach to architectural and environmental design. Studio work with specific projects to exercise the analytical, the conceptual and the developmental stages of design. Prerequisite: EVIE 2640 (or 079.264).

**EVIE 3690** DESIGN STUDIO 6 Cr.Hrs.6  
(formerly 079.369) Studio projects which explore and elaborate systems of meaning in interior place making in the public realm; developing strategies and processes in the design of transitional interior environments. Pre-requisite EVIE 3680 (or 079.368).

## SECTION 5: Environmental Design Interior Environment Course Descriptions-4000 Level

**EVIE 4000** Interior Design History and Theory 2 Cr.Hrs.3  
Examinations of concepts, theories and writings related to the development of interior Design as a discipline and profession, from Modernism to the present day. Prerequisite: EVIE 3002 Interior Design History and Theory 1. Not to be held for credit with the former EVIE 3660.

**EVIE 4002** Indoor Systems 1 Cr.Hrs.3  
In-depth, whole building examination of various integrated active and passive environmental controls systems. Focus on working with existing commercial building construction and environmental systems when integrating new interior design and ecological concepts and strategies. Introduction to building performance assessment, construction drawings and schedules. Prerequisite: EVIE 3004 and EVIE 3012. Corequisite: EVIE 4010. Not to be held for credit with the former EVIE 3620.

**EVIE 4004** Indoor Systems 2 Cr.Hrs.3  
Broad exploration of a variety of contemporary and innovative building technologies and their integration with interior design. Focus on ecological, new building construction concepts and measure, delivered in the context of integrated design team processes and building systems innovation. Integration and coordination of interior architectural elements with active and passive building systems. Prerequisite: EVIE 4002.

**EVIE 4006** Design Methods and Processes Cr.Hrs.3  
Development of knowledge and abilities to collect, analyze, synthesize, interpret, and apply information for the purpose of identifying and solving interior design problems. Not to be held for credit with the former EVIE 3640.

**EVIE 4008** Digital Media (AutoCAD) Cr.Hrs.3  
Drafting and designing for Interior Design students with

AutoCAD. The course will focus on using AutoCAD Release 200X, with exposure to Autodesk's Architectural Desktop and Revit Version X. The course is set up to take students from the basics of using the program to being able to produce a conventionally correct working drawing and a rendered 3D representation. Not to be held for credit with former EVIE 3670.

**EVIE 4010** Interior Design Studio 4.1 Cr.Hrs.6  
Projects that explore the interaction between urban context, programmatic requirements and design concepts; integration of building technology and three-dimensional spatial development; development of communication skills and methods. Not to be held with the former EVIE 3690. Prerequisite: EVIE 3010. Corequisite: EVIE 4002.

**EVIE 4012** Interior Design Studio 4.2 Cr.Hrs.6  
Design studio with the potential for collaboration, exploring regional and global influences, communication technology, history and temporality in the design of interior environments.

**EVIE 4014** Advanced Interior Design Media Cr.Hrs.3  
Advanced visual communications media for interior designers, focusing on 3D computer-aided design and presentation. Development in the use of a selected range of drawing and rendering software applications. Further development in integrating hand and digital methods. Prerequisite: EVIE 4008 or consent of instructor.

## SECTION 5: Environmental Design, Landscape + Urbanism Course Descriptions-3000 Level

**EVLU 3000** History of Designed Environments Cr.Hrs.3  
A critical examination and appraisal of design for dwelling in the context of settlement with emphasis on representation of diverse positions on key issues in design practice. Studies will include consideration of cross cultural precedents and lessons from around the world.

**EVLU 3002** Site Planning Cr.Hrs.3  
An investigation of the relationship between natural and cultural processes in the formation of the built environment, including a review of the methods and strategies employed for site programming, inventory, analysis, and development at different scales of intervention.

**EVLU 3004** Ecology and Design 2 Cr.Hrs.3  
This course will focus on an examination of ecological and technological perspectives on the planning, design and making of the physical environment. This will include a meshing of prediction and advocacy concerning new models of sustainable urbanization, focusing on green technology and infrastructure. Key theories and their application to landscapes at varied scales will be considered along with salient literature, current issues, design precedents and potentials for creative expression and interpretation. Prerequisite EVDS 2200.

**EVLU 3006** Studio 3: Dwelling/ Precinct/ Everyday Life Cr.Hrs.9  
A studio/lecture course that examines the notion of dwelling through spatial design with a concentration at the scale of the precinct in the private to semi-private realm focusing on



the needs of the individual, on spatial qualities, materials, and site design detail. Theoretical, analytical, conceptual, design, planning and communication skills in landscape + urbanism will be developed and applied in distinct projects. Emphasis is on habitat by design, issues of contested space, ecological design and sustainability. May include a mandatory field studies trip; location and cost to be determined on a yearly basis.

**EVLU 3008 Studio 4: Networks and Infrastructure Cr.Hrs.9**

A critical exploration of analytical, conceptual, and developmental aspects of design of the public realm in an experimental studio setting. Social, political, economic, communication, and ecological networks will be studied at the scale of neighborhood and community in the urban realm.

**EVLU 3010 Landscape and Urbanism Theory Cr.Hrs.3**

An examination through lectures, readings, seminars and essay assignments, of twentieth and twenty first century philosophical thinking, which has been influential in the theory and practice of landscape architecture, planning and urbanism. Emphasis is on ideas, paradigms, and manifestos. This will include a study of the social, political, religious, cultural, technological, and aesthetic forces behind landscape and urbanism, and the forms that these forces have generated.

**EVLU 3012 Site Morphology and Grading Cr.Hrs.3**

An examination of the means and methods used to create landscapes that are shaped by earthwork grading. This will include the study of the forces, principles, and techniques in the modelling and manipulation of the ground plane and the resolution of cultural, ecological and hydrological design considerations implicit in landform design.

**EVLU 3014 Placemaking Fundamentals Cr.Hrs.3**

An introduction to placemaking as an integrated community-based application of landscape and urbanism concepts, based on topical themes, such as the Great Neighbourhood or Edens Lost and Found.

## SECTION 5: Environmental Design, Landscape + Urbanism Course

### Descriptions- 4000 Level

**EVLU 4000 Philosophy, Ethics and Aesthetics Cr.Hrs.3**

An examination of philosophical issues and debates regarding ethics and aesthetics, and their influence and potential upon urban design and urban form in the past and present, and to speculate upon the future. Prerequisite: EVLU 3010.

**EVLU 4002 Construction Materials Cr.Hrs.3**

A comprehensive introduction to construction materials, methods and processes. Examination of regulatory issues of human safety and techniques for communicating construction proposals with application to how this information is incorporated into contracts. Field trips to nurseries, quarries, lumber yards, and urban sites where students can observe materials transformed to comply with the requirements of designers. Prerequisite: EVLU 3012.

**EVLU 4004 Inquiry by Environmental Design: Researching Space-Place Transformation Cr.Hrs.3**

An exploration of the design/research relationship, from a critical and creative thinking perspective will be the core of this course, viewing design and research as linked forms of inquiry into space-place transformation. A focus will be on design/research methods and approaches appropriate to informing and investigating designed environments and community design contexts.

**EVLU 4006 Special Topics in Community Design Cr.Hrs.3**

This course will involve a critical examination of specific topics such as: health and community design; inner city environments; and Canadian community planning and design, and its contexts.

**EVLU 4008 Plants, Ecosystems and Design Cr.Hrs.3**

The examination of cultural and technical aspects of designing with plants will be explored in an urban context through field investigations, lectures, seminars and assignments. Issues of plant identification, planting design types, their application to contemporary landscape architecture, technical requirements, planting details and ecological integration in the urban environment will be included.

**EVLU 4010 Community Design Process and Method: Advanced Placemaking Cr.Hrs.3**

An introduction to the integration of perception, intention and placemaking associated with manifestations of community, especially communities of interest, and systems of 'communities of communities'. A consideration of the relationship of space-place transformation and placemaking, via participatory design processes will be examined as part of a critical design and planning process.

**EVLU 4012 Studio 5: Possible Urbanism(s) Cr.Hrs.9**

A radical exploration of analytical, conceptual, and socio-political aspects of urban public place in an experimental studio setting. An emphasis will be placed on design as mediation between competition demands. The studio incorporates the theory and application of three dimensional simulation technology in design.

**EVLU 4014 Studio 6: Emergent Futures Cr.Hrs.9**

This studio integrates planning and design from the scale of urban infrastructure through to design detail in the context of landscape and urbanism. An emphasis is placed on the challenges of relevant equitable environmental and social design in the post-industrial world. The studio incorporates the theory and application of CAD and GIS technology in design.

**EVLU 4016 History of Landscape and Urbanism Cr.Hrs.3**

An historical survey of human made landscapes and urban settlement form, patterns, and types, including major themes and movements. Prerequisite: EVLU 3000.

**EVLU 4018 Principles of Urban Design Cr.Hrs.3**

This course will examine urban design principles, practices, and applications including political and social systems, and their impacts on the contemporary urban condition.



## School of Art

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## Chapter Contents

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### SECTION 1: Degree and Diploma Programs Offered

Program/Degree	Years to complete	Total Credit Hours
BFA General Studio	3*	94
BFA Honours Studio	4*	124
Diploma in Art	4*	106
BFA Art History General	3**	91
BFA Art History Honours	4**	121

\* Admission is by direct entry from high school with portfolio or through University 1 with portfolio.

\*\* This includes 24 to 30 credit hours of study in University 1 before admission to Art History. No portfolio required.

### SECTION 2: Admission Requirements

The following is a summary of admission requirements in the School of Art. There is an annual admission quota and admission is competitive.

Entry requirements to the University of Manitoba are listed in the [Admissions](#) chapter of this Calendar.

- 3.1 Scholastic Standards
- 3.2 University Written English and Mathematics Requirement
- 3.3 Attendance
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### SECTION 4: Program and Graduation Requirements

- 4.1 Bachelor of Fine Arts - Studio Programs
- 4.2 Diploma in Art Program
- 4.3 Bachelor of Fine Arts – Art History Programs
- 4.4 Elective Subjects and Academic Requirements

### SECTION 5: Course Descriptions

All admission requirements, as well as application deadline dates and forms, are included in an applicant information bulletin available from the Admissions Office, Enrolment Services, 424 University Centre; this information is also posted on the university's website,



[www.umanitoba.ca/schools/art](http://www.umanitoba.ca/schools/art). Once there, select "Future Students".

An acceptance deposit of \$100 is required and will be credited towards tuition when registration is complete.

## 2.1 Admission Requirements: Studio Programs

### Bachelor of Fine Arts Studio – General Program

Initially, all students wishing to complete a Fine Arts studio degree are admitted to the Bachelor of Fine Arts General Program. Admission to the School of Art is directly from high school or from University 1. Grade 12 Art is recommended. In addition to academic standing in high school of University 1, each applicant must submit a portfolio. Information about the admission and portfolio requirements is available on the School of Art website: [umanitoba.ca/schools/art](http://umanitoba.ca/schools/art). Once there, select "Future Students".

### Bachelor of Fine Arts Studio – Honours Program

To transfer to the Studio Honours program, a student must successfully complete 64 credit hours of study in the first two years of the General Program, with a minimum degree GPA of 2.5. Contact the School of Art Student Advisor to arrange for a transfer once the 64 credit hours have been achieved. The School offers both a BFA Honours in Graphic Design and in Studio. In order to be eligible to register for the final fourth year of the Studio Honours Degree program, the student must have completed 21 credit hours of Studio courses at the 3000 level.

### Diploma in Art

Admission to the Diploma in Art requires a high school diploma. Applicants must submit a portfolio and satisfy high school course requirements as described in the application bulletin available from the Admissions Office.

## 2.2 Admission Requirements: Art History Programs

Students wishing to complete an Art History degree must first complete 24-30 credit hours in University 1, including 12 credit hours from the list that follows, and achieve a minimum degree GPA of 2.5. No portfolio required.

FAAH 1030 Introduction to Art 1A (3)

FAAH 1040 Introduction to Art 2A (3)

English Literature: ENGL 1310 Literary Topics (3); or ENGL 1200 Representative Literature (6); or ENGL 1300 Twentieth Century Literature (6).

HIST 1200 or PHIL 1200 or 1510 or ASIA 1420 and ASIA 1430 (6)

FA 1020, Math in Art or MATH 1020 or any other course that meets the University of Manitoba Math requirement (3)

A language course - French, German, or Italian recommended (6)

Science or Social Science elective (6)

Once University 1 regulations are met, students will initially be admitted to the Bachelor of Fine Arts Art History – General Program.

### Honours Program

To transfer to the Art History Honours program, a student must successfully complete 70 credit hours of study in the General Program, with a degree GPA of 2.5. Contact the School of Art Student Advisor to arrange for a transfer once the 70 credit hours have been achieved.

## 2.3 Additional Admission Categories,

*Mature Students:* A mature student is eligible to enter the School of Art as a student in the Diploma in Art program. A Diploma student may transfer into the degree program after completing 25 credit hours in the Diploma Program.

*Transfer Students:* A student seeking transfer to the School of Art from another faculty at the University of Manitoba should contact the School of Art Student Advisor regarding transfer of credit. Academic courses completed at other institutions will be assessed for equivalency only after a student is admitted to the School and paid the deposit. The maximum transferable to the B.F.A. General Program is 30 credit hours. The maximum transferable to the B.F.A. Honours Program is 60 credit hours.

*Special Students:* A special student is someone who is permitted by the Director of the School of Art to take courses for interest and whose basis of admission is normally possession of a first Fine Arts degree. The student should check with the School of Art Student Advisor first about the application; the student's course choice is dependent on previous courses taken as pre-requisites and space availability in the class.

*Audit Students:* Art history courses may be audited with the permission of the instructor. Studio courses cannot be audited.

*Visiting Students:* A visiting student can take courses in the School of Art on a letter of permission from the home university. The specific courses for which permission is granted must be listed in the Letter of Permission.

## SECTION 3: Faculty Academic Regulations

The provisions of the chapter [General Academic Regulations and Requirements University Policies](#) apply to all students. In addition, the School of Art has the following regulations and requirements.



### 3.1 Scholastic Standards, General Scholastic Standards for all Degree and Diploma Programs:

A minimum Grade Point Average of 2.5 is required.

A student placed on probation at the end of an academic year must clear the probationary status by the end of the next academic session or will be required to withdraw permanently from the School of Art.

Studio First Class Honours: Upon completion of the requirements for the BFA Honours Program, a student who achieves a degree GPA of 3.5 in courses applicable to the last two years of the Honours program will be awarded the BFA Honours Degree First Class.

Art History First Class Honours: Upon completion of the requirements for a BFA Art History Honours Program, a student who achieves a degree GPA of 3.75 in courses taken in the last two years will be awarded BFA Art History Honours Degree First Class.

#### Field Trip Policy

The Field Trips are a requirement for all School of Art programs. Exemption is granted only on compassionate, medical or legal grounds. In case of accommodation, the student must register for the field trip and pay the fee and an alternate assignment must be completed successfully for credit. It is the student's responsibility to acquire all necessary travel documentation at least three months prior to departure. This includes a valid passport, and for international students, a travel visa for the United States. Students under the age of eighteen require written parental or guardian permission. Students with questions should check with Canada Border Services Agency to determine the correct documentation required for their citizenship status ([www.cbsa-asfc.gc.ca](http://www.cbsa-asfc.gc.ca)).

### 3.2 University Written English and Mathematics Requirement

Students in the BFA Studio and Art History Programs are required to complete, within the first 60 credit hours of their programs, the Written English and Mathematics requirements.

The School of Art accepts all courses from any department with a "W" designation to fulfill the Written English Requirement for BFA Studio General/Honours Students. Art History General and Art History Honours Degree Programs require three credit hours of any English Literature.

The Mathematics requirement for all Studio and Art History Degree Programs in the School of Art can be met through FA 1020 Mathematics in Art, or any other university course designated as satisfying the mathematics requirement.

Students in the Diploma Program do not need to fulfil the Written English or Mathematics requirement.

Refer to the chapter on [General Academic Regulations and Requirements](#) of this *Calendar* for the complete Written English and Mathematics policy.

### 3.3 Attendance

Regular attendance is expected in all courses. Letters of warning may be issued for unexcused absences in excess of three for a course in one term. Unexcused absences in excess of four for a course that meets twice a week or five for a course that meets three times a week in one term may result in suspension.

### 3.4 Voluntary Withdrawal Policy

Refer to the general policy on voluntary withdrawal from programs and courses in the chapter, [General Academic Regulations and Requirements](#).

### 3.5 Residency Requirement Studio Programs:

A student in the BFA General Studio degree may take up to 30 credit hours applicable to the program at another institution allowable for transfer. All Senior Studio courses must be taken at this University.

### 3.6 Dean's Honour List,

School of Art students who achieve a Sessional GPA of 3.3 and carry the minimum required credit hours in the current year of study will be included on the Dean's Honour List. Students holding incomplete or deferred status are not eligible for the Honour List.

## SECTION 4: Program and Graduation Requirements

### 4.1 Bachelor of Fine Arts Studio Programs,

The School of Art offers degrees that cover the history, theory, and techniques of art. Students must also take elective courses outside the School of Art. These programs provide a general cultural background as well as the technical education necessary to become an educator, or a professional creative artist in fine art or applied fields. The programs reflect the assumption that in a time of fluctuating cultural values, technical training alone is not sufficient for significant work in any branch of the arts.

The first two years offer basic instruction in the fundamental principles of drawing, design and representation. In the fine arts studio electives in second year, the student selects a program that provides specialization in one or more of the following: ceramics, drawing, graphic design, painting, photography, print media, sculpture and video.

The School of Art offers two Honours Degree Programs, Graphic Design and Studio. In order to be transferred from the General Degree to either of the Honours Degree



Programs, a student must have completed 64 credit hours. The Student Advisor will be able to transfer the student from General to Honours. In order to be eligible to do the final fourth year Honours year (the Senior Studio and Honours Seminar courses), students in the Honours Studio Degree must have completed 21 credit hours of Studio courses at the 3000 level.

The school reserves the right to retain temporarily or permanently any work done by students in fulfilment of course requirements. The following degrees have links to their appropriate Worksheets. For a listing of degree requirements, please see the worksheets.

**General Studio Degree:**

[www.umanitoba.ca/schools/art/content/pdf/BFA\\_General\\_Degree\\_WS\\_2012-13.pdf](http://www.umanitoba.ca/schools/art/content/pdf/BFA_General_Degree_WS_2012-13.pdf)

**Honours Studio Degree:**

[www.umanitoba.ca/schools/art/content/pdf/BFA\\_Honours\\_WS\\_2012-13.pdf](http://www.umanitoba.ca/schools/art/content/pdf/BFA_Honours_WS_2012-13.pdf)

**Honours Graphic Design Degree:**

[www.umanitoba.ca/schools/art/content/pdf/BFA\\_Honours\\_GraphicDesign\\_WS\\_2012-13.pdf](http://www.umanitoba.ca/schools/art/content/pdf/BFA_Honours_GraphicDesign_WS_2012-13.pdf)

**First Year-University 1: (24-30 credit hours)**

FAAH 1030	Introduction to Art 1A	3
FAAH 1040	Introduction to Art 2A	3
	One of:	
	HIST 1200	
	PHIL 1200	
	PHIL 1510	
	ASIA 1420 and ASIA 1430	6
	Language Requirement	6
	English Literature Requirement	3
	Mathematics Requirement	3
	Science/Social Science elective	6
	<b>TOTAL CREDIT HOURS</b>	<b>30</b>

NOTE: If 24 credit hours are completed in year one, the student must take an additional 6 credit hours elsewhere in the program.

For a complete BFA Art History General Degree Worksheet which outlines Degree requirements, please go to:

[www.umanitoba.ca/schools/art/content/pdf/arthistory\\_general\\_worksheet.pdf](http://www.umanitoba.ca/schools/art/content/pdf/arthistory_general_worksheet.pdf)

**4.2 Diploma in Art Program,**

The Diploma in Art is a four-year program, essentially technical in nature, which prepares students for careers as practising artists in either the fine or applied fields. A minimum of 106 credit hours is required for the Diploma in Art Program. Please click on the link below for the Diploma Worksheet.

Diploma in Art:

[www.umanitoba.ca/schools/art/content/pdf/Diploma\\_WS\\_2012-13.pdf](http://www.umanitoba.ca/schools/art/content/pdf/Diploma_WS_2012-13.pdf)

**4.3 Bachelor of Fine Arts - Art History Programs**

The Art History program at the School of Art offers students an opportunity to consider, in a cultural context, both Western and non-Western artistic traditions with an emphasis on the former from the Renaissance to the present. While all courses acknowledge methodological issues, the program also offers courses in art theory and criticism at the second- and third-year levels. Students enrolled in this program broaden their knowledge of art production with studio electives. The BFA Art History General Degree is 91 credit hours.

Students must choose courses from the following list in order to apply for admission to the BFA Art History General Degree:



**Art History (Honours).**

The BFA Art History Honours Degree totals 121 credit hours. Students may choose to be switch to Honours after completing 70 credit hours and consulting with the Student Advisor.

The requirements for the BFA Art History Honours Degree may be found at:

[www.umanitoba.ca/schools/art/content/pdf/arthistory\\_honours\\_worksheet.pdf](http://www.umanitoba.ca/schools/art/content/pdf/arthistory_honours_worksheet.pdf)

**4.4 Elective Subjects and Academic Requirements ,**

In addition to the Art History courses in the School of Art, the following courses from other faculties fulfil the Art History elective requirement. Not all courses are offered every year.

CLAS 2670	Greek Art and Archaeology	3
CLAS 2680	Roman Art and Archaeology	3
RLGN 2570	Indian Religious Art and Architecture	3
TXSC 2420	History of Textiles	3

**SECTION 5: Fine Arts Course Descriptions-**

**Fine Arts-1000 Level**

**FA 1020** Mathematics in Art Cr.Hrs.3  
 (Formerly 054.102) Specific theory, structuring systems, and mathematical methods and principles used in works of art from various historical periods and contexts will be explored in relation to Euclidean and non-Euclidean geometries. Topics include linear perspective; shapes, patterns, balance and symmetry; ratio, proportion, and harmony; and order, dynamics, and chaos. The course will be one half art and one half mathematics, team-taught by faculty from the School of Art and the Department of Mathematics. This course is also given in the Department of Mathematics as MATH 1020. This is a terminal course and may not be used as a prerequisite for other Mathematics courses. This course cannot be used as part of an Honours, Major, General or Minor program in the mathematical sciences. Not available to any student already holding a grade of "C" or better in any Mathematics courses with the exception of MATH 1010 (136.101), MATH 1190, MATH 1191 (136.119). Not to be taken concurrently with any other Mathematics course with the exception of MATH 1010, MATH 1190, or MATH 1191. Not to be held for credit with MATH 1020 (136.102). No prerequisite.

**FA 1270** Health Hazards in the Arts Cr.Hrs.1  
 (Formerly 054.127) Lectures on the hazards inherent in the use of common artists' materials and equipment. This course is graded pass/fail. Prerequisite for all School of Art studio courses with the exception of STDO 1200 (or 054.120), STDO 1220 (or 054.122), FAAH 1030 (or 054.103), FAAH 1040 (or 054.104), FAAH 1050 (or 054.105) and FAAH 1060 (or 054.106).

**FA 1990** First Year Field Trip Cr.Hrs.0  
 (Formerly 054.199) A field trip conducted by members of faculty. When the field trips are destined for the United States, students requiring a visa should make arrangements to obtain the visa at least 90 days before field trip departure date. A field trip exemption is not grantable except under extreme/extraordinary/visa issues circumstances. The field trip is required for a BFA General Degree and the Diploma program. Students unable to obtain a visa should contact their student advisor.

**SECTION 5: Fine Arts Course Descriptions-  
 Fine Arts-2000 Level**

**FA 2620** Writing About Art Cr.Hrs.3  
 (Formerly 054.262) This course is designed to give art history majors, studio majors, and other interested students studying art history the opportunity to develop their writing skills in the context of the requirements of the discipline. The focus will be on the production of both academic and critical writing about historical and contemporary art, as well as on writing which meets the practical needs of professional artists. This course can only be held as "academic elective" credit for students within the School of Art. Prerequisite: FAAH 1030 (or 054.103) and FAAH 1040 (or 054.104) or FAAH 1050 (or 054.105) and FAAH 1060 (or 054.106); or the previous 054.124 or 054.130.

**SECTION 5: Fine Arts Course Descriptions-  
 Fine Arts-3000 Level**

**FA 3440** Field Trip Cr.Hrs.0  
 (Formerly 054.344) A field trip conducted by members of faculty. When the Field Trips are destined for the United States, students requiring a visa should make arrangements to obtain the visa at least 90 days before field trip departure date. A field trip exemption is not grantable except under extreme/extraordinary/visa issues circumstances. The field trip is required for a BFA General Degree and the diploma program. Students unable to obtain a visa should contact their student advisor. Prerequisite: First Year Field Trip. This course is graded pass/fail.

**SECTION 5: Fine Arts Course Descriptions-  
 Fine Arts Art History-1000 Level**

**FAAH 1030** Introduction to Art 1A Cr.Hrs.3  
 (Formerly 054.103) A basic study/survey of world art history and theory to the early Renaissance. May not be held for credit with FAAH 1050 (or 054.105) or the previous 054.124 or 054.130. (Formerly first half of 054.124) This course is a prerequisite to further study in art history and theory of art.

**FAAH 1040** Introduction to Art 2A Cr.Hrs.3  
 (Formerly 054.104) A basic study/survey of world art history and theory from the Renaissance to the present. May not be held for credit with FAAH 1060 (or 054.106) or the previous



054.124 or 054.130. Prerequisite: FAAH 1030 (or 054.103) or FAAH 1050 (or 054.105). (Formerly second half of 054.124) Prerequisite to further study in art history and theory of art.

**FAAH 1100** Survey of Asian Art Cr.Hrs.3

An introductory survey of the arts of India, China and Japan from prehistory to the present. May not be held with FAAH 2100 (or 054.210 or 054.247 or 054.248).

**FAAH 1804** Unallocated Credit Cr.Hrs.3  
Campus Manitoba course.

## SECTION 5: Fine Arts Course Descriptions- Fine Arts Art History-2000 Level

**FAAH 2060** Medieval to Early Renaissance Art and Architecture Cr.Hrs.3

(Formerly 054.206) An introduction to the study of Medieval art and architecture in Europe, from the very beginnings of a specifically Christian artistic tradition to the beginning of the Renaissance. May not be held for credit with the previous 054.251 or 054.252. Prerequisite: 6 credits from FAAH 1030 (or 054.103), FAAH 1040 (or 054.104), or FAAH 1050 (or 054.105) or FAAH 1060 (or 054.106); or the previous 054.124 or 054.130; or written permission of the instructor.

**FAAH 2070** Renaissance to Baroque Art and Architecture Cr.Hrs.3

(Formerly 054.207) An introduction to the study of Renaissance art and architecture up to the Baroque in the context of the social, political and economic circumstances of this time. May not be held for credit with the previous 054.245, 054.246, 054.249 or 054.250. Prerequisite: 6 credits from FAAH 1030 (or 054.103), FAAH 1040 (or 054.104), or FAAH 1050 (or 054.105) or FAAH 1060 (or 054.106); or the previous 054.124 or 054.130; or written permission of the instructor.

**FAAH 2080** Modern to Contemporary Art Cr.Hrs.3

(Formerly 054.208) A study of the major movements, themes, and media of Western Art from the late 18th century to the present. May not be held for credit with the previous 054.368 or 054.369. Prerequisite: 6 credits from FAAH 1030 (or 054.103), FAAH 1040 (or 054.104), or FAAH 1050 (or 054.105) or FAAH 1060 (or 054.106); or the previous 054.124 or 054.130; or written permission of the instructor.

**FAAH 2090** Art of the North American Aboriginal Peoples Cr.Hrs.3

(Formerly 054.209) A study of the art and artifacts of the indigenous peoples of North America (other than the Inuit). No prerequisite. May not be held for credit with the previous 054.373.

**FAAH 2110** Women and Art Cr.Hrs.3

(Formerly 054.211) This art history course will examine the aesthetics, ideology and social conditions that have shaped women's relationships to the visual arts and to art history, as artists, as patrons, and as subject matter. No prerequisite.

**FAAH 2910** Field Studies in Art History I Cr.Hrs.3

(Formerly 054.291) This off-campus travel course will provide students with the opportunity to study firsthand the art and architecture of a particular city or region in a broad cultural context. Course location may vary from year to year.

Offered during Summer Session only. Prerequisite: Written permission of instructor.

**FAAH 2920** Field Studies in Art History 2 Cr.Hrs.3

(Formerly 054.292) This off-campus travel course will provide students with the opportunity to study firsthand the art and architecture of a particular city or region in a broad cultural context. Course location may vary from year to year. Offered during Summer Session only. Prerequisite: Written permission of instructor.

**FAAH 2930** Writing about Art Cr.Hrs.3

This course is designed to give students in Art History and Studio programs the opportunity to develop their writing skills with a focus on academic and critical writing on both historical and contemporary art. The practical needs of professional artists will also be covered. Prerequisites: FAAH 1030 or FAAH 1040 or FAAH 1100. May not be held with FA 2620.

## SECTION 5: Fine Arts Course Descriptions- Fine Arts Art History-3000 Level

**FAAH 3130** Topics in Medieval Art and Architecture Cr.Hrs.3

(Formerly 054.313) Significant topics in Medieval art and architectural history. Topic will vary from year to year. Depending on the topic, this course may not be held for credit with one or more of the following courses: the previous 054.251 or 054.252. Prerequisite: FAAH 2060 (or 054.206) or written permission of the instructor.

**FAAH 3140** Topics in Renaissance and Baroque Art and Architecture Cr.Hrs.3

(Formerly 054.314) Significant topics in Renaissance and Baroque art and architectural history. Topic will vary from year to year. Depending on the topic, this course may not be held for credit with one or more of the following courses: the previous 054.245, 054.246, 054.249 or 054.250. Prerequisite: FAAH 2070 (or 054.207) or written permission of the instructor.

**FAAH 3150** Topics in 18th and 19th Century Art Cr.Hrs.3

(Formerly 054.315) Significant topics in 18th and 19th century art history. Topic will vary from year to year. Depending on the topic, this course may not be held for credit with one or more of the following courses: the previous 054.258, 054.368, 054.369, 054.370. Prerequisite: FAAH 2070 (or 054.207) or FAAH 2080 (or 054.208) as appropriate to the topic, or written permission of the instructor.

**FAAH 3160** Topics in 20th Century Art Cr.Hrs.3

(Formerly 054.316) Significant topics in 20th century art history. Topic will change from year to year. Depending on the topic, this course may not be held for credit with one or more of the following courses: the previous 054.231, 054.250 or 054.379. Prerequisite: FAAH 2080 (or 054.208) or written permission of the instructor.

**FAAH 3180** History of Photography Cr.Hrs.3

(Formerly 054.318) The development of photography from its origins to the present. May not be held for credit with the previous 054.258 or 054.259. Prerequisite: FAAH 2080 (or 054.208) or written permission of the instructor. (Formerly 054.259)

**FAAH 3190** History of Ceramics Cr.Hrs.3

(Formerly 054.319) This course will examine the history of ceramics, extending from prehistory in Asia to recent work in Europe, the United States and Canada. No prerequisite.

**FAAH 3200** Art in New Media Cr.Hrs.3

(Formerly 054.320) This course will consider art produced in non-traditional media during the Modern era, i.e. since the 18th century, with emphasis on developments during the 20th century and particularly the last 40 years. Prerequisite: FAAH 2080 (or 054.208) or written permission of the instructor.

**FAAH 3202** Contemporary Art History Cr.Hrs.3

This course will consider the art history of the past few decades with an emphasis on recent and contemporary developments. Prerequisite: FAAH 2080 (054.208) or written permission of the instructor.

**FAAH 3210** Introduction to the Theory and Criticism of Art Cr.Hrs.3

(Formerly 054.321) An introduction to the theory and criticism of art. May not be held for credit with the previous 054.257, 054.340, or 054.380. Prerequisite: any second-year course or written permission of the instructor. (Formerly 054.257)

**FAAH 3220** Topics in Aboriginal Art Cr.Hrs.3

(Formerly 054.322) This course will cover significant topics in the art of the North American Aboriginal peoples, including the Inuit. Topic will vary from year to year. Prerequisite: FAAH 2090 (or 054.209) or FAAH 3430 (or 054.343), as appropriate, or written permission of the instructor.

**FAAH 3230** Chinese Art and Architecture Cr.Hrs.3

(Formerly 054.323) A survey of the art and architecture of China beginning with the Shang-Yin Period (2000 BCE) and continuing to the present. May not be held for credit with the previous 054.247. Prerequisite: FAAH 2100 (or 054.210) or written permission of the instructor.

**FAAH 3240** Japanese Art and Architecture Cr.Hrs.3

(Formerly 054.324) A survey of the art and architecture of Japan beginning with the Jomon Period (300 BCE to 300 CE) and continuing through the Heisei Period (1989 - present). May not be held for credit with the previous 054.248. Prerequisite: FAAH 2100 (or 054.210) or written permission of the instructor.

**FAAH 3250** Topics in Art History Cr.Hrs.3

(Formerly 054.325) This course will vary from year to year depending on the needs of students and the interests and availability of instructors. May not be taken for credit with a course equivalent to the topic currently offered. Prerequisite: Any 2nd year course or written permission of instructor.

**FAAH 3260** Canadian Art and Architecture to World War 2 Cr.Hrs.3

(Formerly 054.326) A study of Canadian art up to World War 2. Prerequisite: FAAH 2080 (or 054.208) or written permission of the instructor.

**FAAH 3270** Canadian Art Since World War 2 Cr.Hrs.3

(Formerly 054.327) A study of Canadian art from World War 2 to the present. Prerequisite: FAAH 2080 (or 054.208) or written permission of the instructor.

**FAAH 3280** Early Byzantine Art and Architecture Cr.Hrs.3

(Formerly 054.328) A study of the origin and evolution of early Byzantine Art and Architecture. Prerequisite: 6 credits from FAAH 1030 (054.103), FAH 1040 (054.104), FAAH 1050 (054.105) or FAAH 1060 (054.106); or the previous 054.124 or 054.130; or FAAH 2060 (or 054.206); or written permission of the instructor.

**FAAH 3290** Later Byzantine Art and Architecture Cr.Hrs.3

(Formerly 054.329) A study of later Byzantine Art and Architecture to the end of the Middle Ages. Special emphasis will be placed on the influence of Byzantine art on the modern traditions of Eastern Europe. Prerequisite: 6 credits from FAAH 1030 (or 054.103), FAAH 1040 (or 054.104), FAAH 1050 (or 054.105) or FAAH 1060 (or 054.106); or the previous 054.124 or 054.130; or FAAH 2060 (054.206); or 054.387; or written permission of the instructor.

**FAAH 3430** Inuit Art Cr.Hrs.3

(Formerly 054.343) The history and analysis of Inuit Art. Prerequisite: 6 credits from FAAH 1030 (or 054.103), FAAH 1040 (or 054.104), FAAH 1050 (or 054.105) and FAAH 1060 (or 054.106); or the previous 054.124 or 054.130; or written permission of the instructor. (Formerly 054.358)

**FAAH 3590** Islamic Art and Architecture Cr.Hrs.3

(Formerly 054.359) A contextual and thematic study of Islamic art and architecture beginning in the 7th century and continuing through the present. Prerequisites: [FAAH 1030 and FAAH 1040] or [FAAH 1050 and FAAH 1060] or [054.103 and 054.104] or [054.105 and 054.106] or FAAH 1100 or FAAH 2100 or 054.210.

**FAAH 3780** Twentieth Century American Art Until 1950 Cr.Hrs.3

(Formerly 054.378) Realism, modernism, and regionalism are among the topics given special emphasis in this study of late 19th and 20th century American art. Prerequisite: one 200-level course in the appropriate area as defined by the instructor, or written permission of the instructor.

**FAAH 3910** Field Studies in Art History 3 Cr.Hrs.3

(Formerly 054.391) This off-campus travel course will provide students with the opportunity to study firsthand the art and architecture of a particular city or region in a broad cultural context. Course location may vary from year to year. Open to Art History and Studio students who have already completed their Art History requirements at the second-year level. Offered during Summer Session only. Prerequisite: written permission of the instructor is required.

**FAAH 3920** Field Studies in Art History 4 Cr.Hrs.3

(Formerly 054.392) This off-campus travel course will provide students with the opportunity to study firsthand the art and architecture of a particular city or region in a broad cultural context. Course location may vary from year to year. Open to Art History and Studio students who have already completed their Art History requirements at the second-year level. Offered during Summer Session only. Prerequisite: written permission of the instructor is required.

**FAAH 3930** Introduction to Curatorial Studies Cr.Hrs.3

A survey introduction to the theory and practice of art display and gallery collecting. Prerequisite: FAAH 2080 or by permission of the instructor.



**FAAH 3940** History of Visual Communication Cr.Hrs.3  
A concentration of the advent of Modernism in visual communication and subsequent graphic design movements in the twentieth century. Prerequisites: STDO 2660 or [FAAH 1030 and FAAH 1040]. May not be held with STDO 3960.

## SECTION 5: Fine Arts Course Descriptions- Fine Arts Art History-4000 Level

**FAAH 4060** Seminar in Art Theory and Criticism Cr.Hrs.3  
(Formerly 054.406) A seminar treating selected topics in the theory and criticism of art. Prerequisite: either FAAH 3210 (or 054.321); the former 054.257, 054.340, or 054.380; or written permission of the instructor.

**FAAH 4070** Seminar in Art History 1 Cr.Hrs.3  
(Formerly 054.407) Seminar treating special topics in Art History. May not be taken for credit if the topic is the same as that previously offered in 054.447, 054.465, 054.466, 054.474, 054.475, 054.476, or 054.483. Prerequisite: one 300-level course in the appropriate area as defined by the instructor, or written permission of the instructor.

**FAAH 4080** Seminar in Art History 2 Cr.Hrs.3  
(Formerly 054.408) Seminar treating special topics in Art History. May not be taken for credit if the topic is the same as that previously offered in 054.447, 054.465, 054.466, 054.474, 054.475, 054.476, or 054.483. Prerequisite: one 300-level course in the appropriate area as defined by the instructor, or written permission of the instructor.

**FAAH 4090** Seminar on Contemporary Issues in Art Cr.Hrs.3  
(Formerly 054.409) A seminar treating contemporary issues in art. The topic varies from year to year. Prerequisite: one 300-level course in the appropriate area as defined by the instructor, or written permission of the instructor.

**FAAH 4250** Seminar on Curatorial Studies Cr.Hrs.3  
Students receive hands-on experience within a critical context of curating an exhibition. Instructional methods include seminar format and practicum in School of Art Gallery. Prerequisites: FAAH 3930 and one 3000-level Art History course or by permission of the instructor.

**FAAH 4710** Directed Study 1 Cr.Hrs.3  
(Formerly 054.471) Directed study in art history. Prerequisite: Written permission of instructor and director.

**FAAH 4720** Directed Study 2 Cr.Hrs.3  
(Formerly 054.472) Directed study in art history. Prerequisite: Written permission of instructor and director.

## SECTION 5: Fine Arts Course Descriptions- Fine Arts Studio Courses-1000 Level

**STDO 1210** Drawing: Studio 1 Cr.Hrs.3  
Students are introduced to key concepts and competencies used in contemporary drawing practice. Prerequisite for further study in fine arts studio courses. May not be held with STDO 1200 (054.120).

**STDO 1240** Figure Study 1 Cr.Hrs.3  
Traditional and experimental approaches to rendering the

figure, culminating in the production of a portfolio of drawings. Prerequisite to further study in the Fine Arts Studio courses. May not be held with STDO 1200 (054.120) or STDO 1230.

**STDO 1250** Drawing: Studio 2 Cr.Hrs.3  
Building on competencies developed in STDO 1210 Drawing: Studio 1, students integrate individual research with methods and materials of contemporary drawing. Prerequisite for further study in fine arts studio courses. May not be held with STDO 1200 (054.120). Prerequisite: STDO 1210.

**STDO 1410** Visual Language Cr.Hrs.3  
An introduction to communication in contemporary visual art through traditional and experimental 2D and 3D modes. Prerequisite for further study in fine arts studio courses. May not be held with STDO 1200 (054.120) or STDO 1220 (054.122).

**STDO 1430** Art Now Cr.Hrs.1.5  
Introduction to current activities in art practices through gallery talks/visits, journal writing, formal critique methods and research methodology. It supports FA 1990 Field Trip which all first year BFA and Diploma in Art students must take. Prerequisite for further study in fine arts studio courses. May not hold with STDO 1200 (054.120) or STDO 1220 (054.122).

**STDO 1450** Open Studio 1 Cr.Hrs.3  
Expanding concepts and ideas developed in Visual Language, students investigate the nature of contemporary art and design. Prerequisite for further study in fine arts studio courses. May not hold with STDO 1200 (054.120) or STDO 1220 (054.122). Prerequisite: STDO 1410 and STDO 1430.

**STDO 1470** Materials Studio Cr.Hrs.3  
Students choose among individual studio area modules to learn material technologies used in art, facilitating students' ability to work in School of Art workshops. Prerequisite for further study in fine arts studio courses. May not be held with STDO 1220 (054.122). Prerequisite: STDO 1410.

**STDO 1510** Art Now Cr.Hrs.3  
Introduction to current activities in art practices through gallery talks/visits, journal writing, formal critique methods and research methodology. It supports FA 1990 (Field Trip) which all first year BFA students must take. Pre-requisite to further study in Fine Arts Studio courses. May not be held with STDO 1200 (054.120), STDO 1220 (054.122) or STDO 1430.

## SECTION 5: Fine Arts Course Descriptions- Fine Arts Studio Courses-2000 Level

**STDO 2210** Sculpture 1 Cr.Hrs.6  
(Formerly 054.221) Modelling in clay, principles of casting; introduction to other media with emphasis on the study of the human figure. Prerequisite: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)].

**STDO 2220** Painting 1 Cr.Hrs.6  
(Formerly 054.222) Basic instruction in oil painting and



pictorial composition. Prerequisite: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)].

**STDO 2230 Ceramics 1 Cr.Hrs.6**

(Formerly 054.223) Introduction to ceramic art, including contemporary processes, techniques, and history.

Prerequisite: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)].

**STDO 2240 Advanced Drawing 1 Cr.Hrs 6**

(Formerly 054.224) Creative use of drawing with emphasis on the human figure. Prerequisite: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)]. May not hold for credit with previous 054.220.

**STDO 2250 Drawing 1 Cr.Hrs.6**

Creative use of drawing with emphasis on the human figure. Prerequisites: [STDO 1210, STDO 1230, STDO 1250, STDO 1410, STDO 1430, STDO 1450, STDO 1470 and FA 1270]. or [STDO 1200, STDO 1220, and FA 1270]. may not be held with STDO 2240 (054.224) or (054.220).

**STDO 2400 Photography 1 Cr.Hrs.6**

(Formerly 054.240) Introduction to the camera and photographic techniques with problems in creative visual expression. Prerequisite: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)].

**STDO 2450 Introduction to Digital Photography Cr.Hrs.6**

Introduction to Digital Photography is a studio course introducing the basic technical foundation and critical understanding of contemporary photo-based image production. Prerequisites: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)].

**STDO 2460 Digital Photography 1 Cr.Hrs.6**

This is a Studio course introducing the basic technical foundation and critical understanding of contemporary photo-based image production. Pre-requisites: [STDO 1210, STDO 1230, STDO 1250, STDO 1410, STDO 1430, STDO 1450, STDO 1470 and FA 1270] or [STDO 1200, STDO 1220, and FA 1270]. may not be held with STDO 2450.

**STDO 2500 Printmaking Intaglio A Cr.Hrs.3**

An introduction to the basic techniques in Intaglio. Prerequisites: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)]. May not hold credit for both STDO 2550, 054.255 or 054.227.

**STDO 2502 Printmaking Intaglio B Cr.Hrs.3**

A continuation in the basic techniques in Intaglio. Prerequisites: STDO 2500 or 054.255 or STDO 2550.

**STDO 2510 Printmaking Silkscreen A Cr.Hrs.3**

An introduction to the basic techniques in Silkscreen.

Prerequisites: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)]. May not hold for credit with STDO 2550 or 054.255 or 054.227.

**STDO 2512 Printmaking Silkscreen B Cr.Hrs.3**

A continuation in the basic techniques in Silkscreen. Prerequisites: STDO 2510 or 054.255 or STDO 2550.

**STDO 2520 Printmaking Lithography A Cr.Hrs.3**

An introduction to the basic techniques in Lithography. Prerequisites: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)]. May not hold for credit with STDO 2550 (Lithography A) or 054.255 (Lithography 1A) or 054.227.

**STDO 2522 Printmaking Lithography B Cr.Hrs.3**

A continuation in the basic techniques in Lithography. Prerequisites: STDO 2520 or 054.255 or STDO 2550.

**STDO 2530 Relief and Monoprints Cr.Hrs.3**

This course introduces the student to working in a printshop environment, using various mediums and methods of creating works on paper. Projects are structured to explore traditional and experimental approaches to monoprinting and relief printmaking. Technical proficiency and skill will require practice and attention to detail. Prerequisites: [STDO 1210, STDO 1230, STDO 1250, STDO 1410, STDO 1430, STDO 1450, STDO 1470 and FA 1270] or [STDO 1200, STDO 1220, and FA 1270].

**STDO 2610 Video 1 Cr.Hrs.6**

(Formerly 054.261) The creative use of video as an art medium. Prerequisite: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)].

**STDO 2630 Design Studio 1 Cr.Hrs.3**

(Formerly 054.263) An introduction to the creative use of design elements and principles applied to problems in Graphic Design. The course provides a grounding in the concepts, techniques and skills required to solve specific problems, develop a personal design process and acquire a deeper understanding of visual media. Prerequisite: FA 1270, STDO 1210, STDO 1230, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)]. May not be held for credit with the former 054.228 or 054.263.

**STDO 2640 Design Studio 2 Cr.Hrs.3**

(Formerly 054.264) A continuation of the investigation of the creative use of advanced design elements and principles applied to problems in Graphic Design. The course provides a grounding in the concepts, techniques and skills required to solve specific problems, develop a personal design process and acquire a deeper understanding of visual media. Prerequisite: STDO 2630 (or 054.263).

**STDO 2650 Digital Design Technology Cr.Hrs.3**

(Formerly 054.265) This course is an introduction to the computer as a creative tool and to explore industry standard software for use in the creative graphic design applications such as advertising, print media, environmental graphics,



illustration and image manipulation. Prerequisite: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)].

**STDO 2650** Digital Design Technology Cr.Hrs.3  
(Formerly 054.265) This course is an introduction to the computer as a creative tool and to explore industry standard software for use in the creative graphic design applications such as advertising, print media, environmental graphics, illustration and image manipulation. Prerequisite: FA 1270, STDO 1210, STDO 1250, STDO 1410, STDO 1430, STDO 1450 and STDO 1470; or [FA 1270 (or 054.127), STDO 1200 (or 054.120) and STDO 1220 (or 054.122)].

**STDO 2660** History of Visual Communication 1 Cr.Hrs.3  
(Formerly 054.266) An introduction to the history of western visual communication from pre-Hellenistic cultures to the beginning of the twentieth century in the context of cultural and technological factors. Prerequisite: FAAH 1030 (or 054.103) and FAAH 1040 (or 054.104), or FAAH 1050 (or 054.105) and FAAH 1060 (or 054.106), or 054.124 and 054.130, and EVDS 1610 (or 079.161), EVDS 1620 (or 079.162), EVDS 1660 (or 079.166), or EVDS 1670 (or 079.167).

**STDO 2670** Design Theory and Criticism 1 Cr.Hrs.3  
(Formerly 054.267) An introduction to the nature of the design process and the principles of visual perception and visual language with a focus on the cultural and commercial roles of visual communication design practice. Prerequisite: FAAH 1030 (or 054.103) and FAAH 1040 (or 054.104), or FAAH 1050 (or 054.105) and FAAH 1060 (or 054.106), or 054.124, 054.130, EVDS 1610 (or 079.161), EVDS 1620 (or 079.162), EVDS 1660 (or 079.166) or EVDS 1670 (or 079.167).

**STDO 2680** Special Topics Cr.Hrs.3  
(Formerly 054.268) Selected projects in Fine Art Studio of current interest. Prerequisite: Written permission of instructor and director

**STDO 2690** Special Topics in Studio Practice 1 Cr.Hrs.3  
Individual three credit hour courses offered in multiple discipline areas. Courses will provide opportunities for skill building, conceptual development and depth of topics of interest. Pre-requisites: [STDO 1210, STDO 1230, STDO 1250, STDO 1410, STDO 1430, STDO 1450, STDO 1470 and FA 1270] or [STDO 1200, STDO 1220, and FA 1270].

**STDO 2710** Interdisciplinary Critique 1 Cr.Hrs.3  
Co-requisite with and complementary to 2000-level Studio practice courses. Students will engage in discussion, readings, and critiques based on work produced in practice courses. Co-requisite(s): STDO 2210; or STDO 2220; or STDO 2230; or STDO 2400; or STDO 2460 (Digital Photography 1); or STDO 1140 (Drawing 1); or STDO 2610; or STDO 2510 and STDO 2512; or STDO 2500 and STDO 2502; or STDO 2520 and STDO 2522; or STDO 2740. Pre-requisites: STDO 1210, STDO 1230, STDO 1250, STDO 1410, STDO 1430, STDO 1450, STDO 1470, and FA 1270.

**STDO 2740** Open Media Cr.Hrs.6  
This interdisciplinary studio course encourages the research, creation, and presentation of works of a diverse nature. Prerequisites: [STDO 1210, STDO 1230, STDO 1250, STDO

1410, STDO 1430, STDO 1450, STDO 1470 and FA 1270]; or [STDO 1200, STDO 1220, and FA 1270].

## SECTION 5: Fine Arts Course Descriptions- Fine Arts Studio Courses-3000 Level

**STDO 3330** Advanced Drawing 2 Cr.Hrs.6  
(Formerly 054.333) Continuation of Advanced Drawing 1 (STDO 2240), with stress on finished drawings and experimental techniques. Prerequisite: STDO 2240 (or 054.224).

**STDO 3370** Advanced Ceramics Cr.Hrs.6  
(Formerly 054.337) Continuation of Ceramics 1 (STDO 2230). Prerequisite: STDO 2230 (or 054.223).

**STDO 3420** Advanced Painting Cr.Hrs.6  
(Formerly 054.342) Continuation of Painting 1 (STDO 2220) with increasing emphasis on painting techniques, theory, and use of expressive idioms. Prerequisite: STDO 2220 (or 054.222).

**STDO 3460** Advanced Sculpture Cr.Hrs.6  
(Formerly 054.346) Continuation of Sculpture 1 (STDO 2210), with emphasis on one of modelling, carving, or construction. Prerequisite: STDO 2210 (or 054.221).

**STDO 3480** Advanced Photography 1 Cr.Hrs.6  
(Formerly 054.348) Continuation of Photography 1 (STDO 2400) or Digital Photography (STDO 2450), with emphasis on print quality and personal imagery. Prerequisite: STDO 2400 (or 054.240) or STDO 2450.

**STDO 3490** Photography 2 Cr.Hrs.9  
(Formerly 054.349) Advanced instruction toward individual expression. (Major course) Prerequisite: a grade of "C+" or better in STDO 2400 (or 054.240) or STDO 2450.

**STDO 3600** Painting 2 Cr.Hrs.9  
(Formerly 054.360) Advanced instruction toward individual expression. (Major course) Prerequisite: a grade of "C+" or better in STDO 2220 (or 054.222).

**STDO 3650** Sculpture 2 Cr.Hrs.9  
(Formerly 054.365) Advanced instruction toward individual expression with emphasis on one of modeling, carving, construction. (Major course) Prerequisite: a grade of "C+" or better in STDO 2210 (or 054.221).

**STDO 3670** Special Topics Cr.Hrs.9  
(Formerly 054.367) Projects of an unusual nature. Click on View "Timetable" to see current offerings. Prerequisite: written permission of instructor and director.

**STDO 3680** Special Topics in Studio Practice 2 Cr.Hrs.3  
Individual three credit hour courses offered in multiple discipline areas. Courses will provide opportunities for skill building, conceptual development and depth on topics of interest. Pre-requisites: will vary depending on the course.

**STDO 3830** Advanced Printmaking A Cr.Hrs.3  
(Formerly 054.383) Continuation of Printmaking 1A. Students may not hold credit for both the former 054.345 and STDO 3830 (or 054.383). Prerequisite: a grade of C in the former 054.255 and STDO 2560 (or 054.256) or



054.227.

**STDO 3840** Advanced Printmaking B Cr.Hrs.3  
(Formerly 054.384) Continuation of Printmaking 1B. Students may not hold credit for both the former 054.345 and STDO 3840 (or 054.384). Prerequisite: a grade of C in STDO 3830 (or 054.383).

**STDO 3910** Design Studio 4 Cr.Hrs.3  
This course builds on students' abilities to solve graphic design problems in visual communications as developed in Design Studio 3, and to increase the repertoire of design problems typically encountered in professional practice. Prerequisite: STDO 3920. May not be held with STDO 3940, 054.347, 054.366.

**STDO 3920** Design Studio 3 Cr.Hrs.3  
This course builds on students' abilities to solve graphic design problems in visual communications as developed in Design Studio 1, and to increase the repertoire of design problems typically encountered in professional practice. Prerequisite: C+ or better in STDO 2630 and STDO 2640. May not be held with: 054.228, 054.347, 054.366, or STDO 3930.

**STDO 3950** New Media Design Cr.Hrs.3  
(Formerly 054.395) An exploration of the 'new media' revolution within a critical graphic design context. The course is also an introduction to the tools and principles of new media content creation and information architecture. Prerequisite: STDO 2650 (or 054.265).

**STDO 3970** Interdisciplinary Critique 2 Cr.Hrs.3  
Co-requisite with complementary to 3000 level Studio practice courses. Students will engage in discussion, readings, and critiques based on work produced in practice courses. Co-requisite(s): STDO 3330, STDO 3420, STDO 3370, STDO 3460, STDO 3480, [STDO 3830 and STDO 3840], or [STDO 3920 and STDO 3910]. Pre-requisite: STDO 2710.

## SECTION 5: Fine Arts Course Descriptions- Fine Arts Studio Courses-4000 Level

**STDO 4450** Advanced Drawing 3 Cr.Hrs.6  
(Formerly 054.445) Advanced individual instruction in creative drawing. Prerequisite: STDO 3330 (or 054.333) or STDO 3630 (or 054.363).

**STDO 4520** Advanced Ceramics 2 Cr.Hrs.6  
(Formerly 054.452) Individual instruction (Ceramics) with concentration in the areas most relevant to the student's creative development. Prerequisite: STDO 3370 (or 054.337) or STDO 3620 (or 054.362).

**STDO 4530** Advanced Painting 2 Cr.Hrs.6  
(Formerly 054.453) Individual instruction with concentration in the areas most relevant to the student's creative development. Prerequisite: STDO 3420 (or 054.342) or STDO 3600 (or 054.360).

**STDO 4550** Advanced Sculpture 2 Cr.Hrs.6  
(Formerly 054.455) Individual instruction with concentration in the areas most relevant to the student's creative development. Prerequisite: STDO 3460 (or 054.346) or STDO 3650 (or 054.365).

**STDO 4570** Advanced Printmaking 2A Cr.Hrs.3  
(Formerly 054.457) Continuation of Advanced Printmaking 2. Students may not hold credit for both STDO 4540 (or 054.454) and STDO 4570 (or 054.457). Prerequisite: one of the former 054.345, the former 054.364, STDO 3830 (or 054.383) and STDO 3840 (or 054.384), or STDO 3890 (or 054.389) and STDO 3900 (or 054.390).

**STDO 4610** Advanced Printmaking 2B Cr.Hrs.3  
(Formerly 054.461) Continuation of Advanced Printmaking 2A. Students may not hold credit for both STDO 4540 (or 054.454) and STDO 4610 (or 054.461). Prerequisite: STDO 4570 (or 054.457).

**STDO 4700** Advanced Photography 2 Cr.Hrs.6  
(Formerly 054.470) Advanced individual instruction in creative photography. Prerequisite: STDO 3480 (or 054.348) or STDO 3490 (or 054.349).

**STDO 4810** Senior Studio 1 Cr.Hrs.6  
Students develop and complete a self-directed program of Studio work. Regular peer and faculty review of Studio program of work. Taught by individual faculty or two-faculty teams. May not hold with STDO 4880 or 054.488. Open only to students in fourth year Honours. Pre-requisite: 21 credit hours of 3000 level Studio courses.

**STDO 4820** Senior Studio 2 Cr.Hrs.6  
Taken after Senior Studio 1 (STDO 4810) students develop and complete their self-directed program of Studio work. Regular peer and faculty review of Studio program of work. Taught by individual faculty or two-faculty teams. Open only to students in fourth year of Honours program. Pre-requisite: STDO 4810. Corequisite: STDO 4920. May not be held with STDO 4880 or 054.488.

**STDO 4860** Design Theory and Criticism 2 Cr.Hrs.3  
(Formerly 054.486) An examination of contemporary personalities, images, ideas, and developments in visual communication design including current issues in design criticism. This course is a part of the graphic design area sequence. Prerequisite: STDO 2670 (or 054.267).

**STDO 4870** Production and Professional Practice Cr.Hrs.3  
(Formerly 054.487) An examination of the technologies and techniques of visual communication production with a focus on the concepts of business and production management. This studio course is a part of the graphic design area sequence. Prerequisite: STDO 3930 (or 054.393), STDO 3940 (or 054.394), STDO 3950 (or 054.395)

**STDO 4880** Bachelor of Fine Arts Thesis Cr.Hrs.18  
(Formerly 054.488) Sometimes referred to as the thesis studio course for one of several areas in the School of Art. This course is generally taken in the fourth year of a Bachelor of Fine Arts Honours degree. Prerequisite: a minimum grade of "B" in one of the following nine credit hour (Major) courses: [STDO 3490](#) (or 054.349); [STDO 3600](#) (or 054.360); STDO 3610 (or 054.361); STDO 3620 (or 054.362); STDO 3630 (or 054.363); STDO 3640 (or 054.364) or STDO 3890 (or 054.389) and STDO 3900 (or 054.390); [STDO 3650](#) (or 054.365) and the former 054.366.

**STDO 4890** Bachelor of Fine Arts Thesis Seminar Cr.Hrs.3  
(Formerly 054.489) This thesis seminar course is taken in



the fourth year of a Bachelor of Fine Arts Honours degree along with thesis studio. Issues of professional practice are examined against contemporary art theory. Students document their work and create artist's statements and interact with Visiting Artists. Prerequisite: Registered concurrently in STDO 4880.

**STDO 4910** Honours Seminar 1 Cr.Hrs.3

This Seminar is taken in the fourth year of the Bachelor of Fine Arts Honours Degree as the first of two Honours Seminar courses and taken co-currently with Senior Studio 1 and Senior Studio 2. Issues of professional practice are examined against contemporary art theory. Students document their work and create artists statements and interact with visiting artists. Prerequisites: 21 credit hours of 300-level Studio courses. Corequisite: STDO 4810. may not be held with STDO 4890 or 054.489.

**STDO 4920** Honours Seminar 2 Cr.Hrs.3

A continuation of STDO 4910, Honours Seminar 1. Issues of professional practice are examined against contemporary art theory. Students document their work and create artists and interact with visiting artists. Corequisite: STDO 4820. Prerequisite: STDO 4910. May not be held with STDO 4890 (054.489).



## Faculty of Arts

**Dean:** Jeffery Taylor

**Associate Dean(s):** Lori Wilkinson (Undergraduate), Greg Smith (Graduate), Robert Hoppa (Research)

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**Academic Staff:**

For complete listings of the Faculty of Arts Academic Staff, please refer to departmental websites.

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**SECTION 1: Degree Programs Offered Leading to a B.A.**

**1.1 Degrees,**

Degree	Years to Complete (Full-time)	*Total Credit Hours
Bachelor of Arts (General)	3*	90
Bachelor of Arts (Advanced)	4*	120
Bachelor of Arts (Honours)	4*	108-120
Bachelor of Arts Integrated Studies	3*	90

\*This includes one year (30 credit hours) of study in University 1. There is no time limit for completion of any of the above degree programs. Students may complete their degree on a full-time or part-time basis.



1.2 Available Honours, Major, Minor and Concentration Programs,

		Concentration*	Minor	General Major	Advanced Major	Honours	Honours Double
Anthropology		•	•	•	•		
Asian Studies		•	•	•			
Canadian Studies		•	•	•		•	•
Catholic Studies		•	•	•			
Central and East European Studies		•	•	•	•		•
The Changing Workplace		•					
Classics	Classical Studies	•	•	•	•		
	Greek	•	•		•		
	Latin	•	•		•		
Economics		•	•	•	•	•	•
	Economics-Mathematics					•	
	Economics-Statistics					•	
English, Film, and Theatre	English	•	•	•	•	•	•
	Film Studies	•	•	•	•		
	Theatre	•	•	•	•		
French, Spanish and Italian	French	•	•	•	•	•	•
	Spanish	•	•	•	•		
	Italian	•	•				
	Italian Studies			•	•		
German and Slavic Studies	German	•	•	•		•	•
	Russian	•	•	•			
	Ukrainian	•	•	•			
	Polish	•	•				
Global Political Economy				•	•		
History		•	•	•	•	•	•
History of Art		•	•	•			
Icelandic		•	•	•		•	•
Judaic Studies		•	•				
Labour Studies		•	•	•	•		



Latin American Studies		•	•				
Linguistics		•	•	•	•		
	Linguistics (UofM) and American Sign Language/English Interpretation (RRC)			•			
Management		•	•				
Mathematics		•	•	•	•		
Medieval and Renaissance Studies		•	•	•	•		
Music		•	•				
Option in Aging		•					
Native Studies		•	•	•	•		
	Native Languages	•	•				
	Aboriginal Governance Stream with required Minor in Business				•		
Philosophy		•	•	•	•	•	•
Political Studies		•	•	•	•	•	•
Psychology		•	•	•	•	•	•
Religion		•	•	•	•	•	•
Sociology		•	•	•	•	•	•
	Criminology			•			
Ukrainian Canadian Heritage Studies		•	•	•	•		
Women's and Gender Studies		•	•	•	•	•	•
	NOTES: Students in the General and Advanced Degree programs may complete a Double Major. See <a href="#">Section 3.1.4</a> or <a href="#">3.2.4</a> for information on the declaration of a Double Major in the respective degree program. Effective September 2009 Arts students may complete Minor programs offered by other Faculties/Schools not listed above providing the Minor Program consists of a minimum of 18 credit hours and all other degree requirements are satisfied. Students in the B.A.I.S. Degree Program may complete Minor programs offered by other Faculties/Schools to satisfy the Concentration requirement providing the Minor program consists of a						



	<p>minimum of 18 credit hours.</p> <p>*Concentrations other than the Option in Aging (which is open to all Arts students) are available only to students in the B.A.I.S. degree program.</p>
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## SECTION 2: Faculty of Arts B.A. General, Advanced or Honours Degree Programs

Admission to the Faculty of Arts B.A. General, Advanced or Honours Degree Programs, The following is a summary of the admission requirements. All admission requirements, as well as application deadline dates and forms, are included in the Faculty of Arts Applicant Information Bulletin that is available from the [Admissions Office](#), Enrolment Services, 424 University Centre; this information is also posted on the University of Manitoba's website.

Completion of a minimum of 24 credit hours of university level courses is required. Depending on the academic performance on the courses acceptable for credit, students may be admitted to or transit into the Faculty in good standing or on academic warning.

At the point of admission or transfer to the Faculty of Arts all students proceeding to an undergraduate B.A. Degree are automatically in the General Degree Program. Subsequently, students may apply through the Faculty of Arts General Office for admission to either the Advanced Degree Program or the Honours Degree program.

The specific requirements for the General, Advanced and Honours Degree programs are given in [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs](#).

Each department and program outlines its entry and requirements in Section 8: Departments in, and Programs and Courses Offered by, the Faculty of Arts.

**2.1 Direct Entry from High School for September 2013,** Effective September 2013, eligible students may apply to enter the Faculty of Arts upon completion of a high school diploma. Eligible students must meet the criteria listed below:

- Manitoba high school graduation, with five full credits at the Grade 12 level, in courses designated S (Specialized), G (General), or U (Dual Credit-University), **or** the equivalent standard from other provinces and countries will be considered.
- Must have a minimum average of 85% in three Grade 12 S or U credits and a minimum grade of 60% in each of the three credits.
- One of the three credits included in the minimum average of 85% must be Grade 12 S or U English.

**Note:** High school mathematics is NOT required for admission to the Faculty of Arts. However, it is recommended students complete either applied mathematics or pre-calculus within the Manitoba high school curriculum, or equivalent, to facilitate their ability to fulfill the University's "M" (or "mathematics") requirement for graduation.

### 2.2 Admission from University 1,

University 1 students in good standing (2.00 cumulative grade point average) may transit to the Faculty of Arts or Science subject to the following conditions:

- Students in good standing who have completed at least 24 credit hours may choose to transit to the Faculty of Arts or Science.
- Students in good standing who have completed 30 credit hours or more of courses must choose to transit to Arts or Science, if not admitted to another faculty or school, prior to the next regular term of registration.
- Students who have completed 24 credit hours or more and who have not achieved a minimum cumulative grade point average of 2.00 may be eligible for special consideration and therefore should contact the Faculty of Arts for further information on transitting upon "Recommendation of the Dean."
- Students who have exceeded 30 credit hours of "F" grades or have more than a combined 42 credit hours of "F" and "D" grades are not admissible. Students may contact the Faculty of Arts for further information and advice.

### 2.3 Admission as a Transfer Student,

Students transferring to the Faculty of Arts from another faculty or school at the University of Manitoba are called "internal transfers." Students transferring to the Faculty of Arts from another university or college are called "external transfers."

Transfer students must apply for admission to the Faculty of Arts at the Ad-missions Office or on-line at [www.umanitoba.ca/applynow](http://www.umanitoba.ca/applynow) by the application deadline date.

For the University of Manitoba's general policy on external transfer students and advanced standing, see the chapter on Admission to the University of Manitoba in this Calendar.

Students who apply to transfer to the Faculty of Arts must have completed no fewer than 24 credit hours of university level coursework and must have achieved a minimum



cumulative grade point average of 2.00. Students who have completed 24 credit hours or more and who have not achieved at least a 2.00 cumulative grade point average may be eligible for special consideration and should contact the Faculty of Arts for information and advice. Students who have exceeded the maximum number of "F" and "D" grades permitted on courses acceptable for credit in Arts (see Section 5.10) will be considered for admission only if they have served the equivalent of a one year suspension.

Anyone who has been placed on academic suspension by another faculty, school, or external institution will not normally be admissible if less than one year has elapsed since he/she had been placed on suspension. The waiting period will be increased to two years if the student has been placed on suspension more than once in consecutive years. For information regarding transfer credit see Sections 5.2.1 and 5.2.2.

#### 2.4 Admission as a Student Seeking a Second Degree,

A student who holds an undergraduate degree from a recognized university program may apply for admission to pursue a second undergraduate degree. For information regarding possible transfer credit see Section 5.14.

#### 2.5 Admission as a Visiting Student,

A "visiting" student is one who is pursuing a degree at another institution and whose basis of admission is a Letter of Permission from his/her home institution granting permission to register at the University of Manitoba. Previously admitted visiting students can register in a subsequent term without applying for admission, provided they have a Letter of Permission and have not changed their home institution. Certain restrictions may be placed on the kind and number of courses in which they will be allowed to register.

#### 2.6 Admission as a Special Student,

A student who holds a first degree and who wishes to take courses out of interest may apply for admission as a "special" student.

### SECTION 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs

#### Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs,

For academic regulations related to graduate degrees, see the *Graduate Calendar* of the Faculty of Graduate Studies. For academic regulations pertaining to the following degrees, *Baccalauréat ès Arts (Latin-Philosophie)*, *Baccalauréat ès Arts (Spécialisé en français)*, and *Baccalauréat ès Arts (Spécialisé en traduction)*, which are also offered under the Faculty of Arts but with instruction available only at Université de Saint-Boniface, see the [Annuaire](#) of the Université de Saint-Boniface.

Students are encouraged, prior to reading the faculty regulations which follow, to review the chapter, General Academic Regulations and Requirements, in this *Academic Calendar*.

It is **highly recommended** that all students entering the Faculty of Arts to pursue a General, Advanced or Honours Degree complete six credit hours in each of five different subject fields within the first 30 credit hours, and that, if possible, they include among those courses the subject fields in which they will probably specialize because future choices may be limited by the initial choice of courses a student makes. Also, students must meet a subject field requirement to qualify for entrance to both the Advanced and Honours programs (see Section 3.2 and 3.3).

Combinations of courses for the Major, Minor and Honours programs, other than those listed, may be permitted with written consent of the department head or program coordinator and consent from the Faculty of Arts General Office. Similarly, Honours courses may be taken by students in the General or Advanced Major programs with the written consent of the department head or program coordinator.

#### 3.1 General Degree Program,

##### 3.1.1 Its General Purpose

The General Degree in the Faculty of Arts involves taking courses in what are traditionally referred to as the "liberal" arts. The goal of a liberal arts education is to provide students with an education in the humanities and social sciences and at the same time prepare them for future careers. An Arts education is intended to provide students with "employability skills" that are highly valued by employers and needed in the contemporary workplace. Some of these skills include reading, writing, listening, speaking effectively, knowledge of language, critical thinking, problem solving, basic numeracy, information literacy, and an appreciation of our cultural, political, and economic milieu.

The General Degree would not normally prepare students for graduate studies. Most graduate programs require students complete a four year degree. Therefore students interested in a graduate program should complete the Bachelor of Arts Advanced or Honours Degree Program following discussion with a departmental graduate program advisor.

##### 3.1.2 Entrance into the B.A. General Degree Program

1) At the point of admission or transfer to the Faculty of Arts all students proceeding to an undergraduate B.A. Degree are automatically in the General Degree Program. Subsequently, students may apply through the Faculty of Arts General Office for admission to either the Advanced Degree Program or the Honours Degree program.

2) All students who have completed 30 credit hours of coursework are encouraged to declare a Major and a Minor. Once the Major(s) or Minor is declared it can be changed to a different subject field at some later registration. Students may also declare a second or Double Major in lieu of a Minor. Students who want to declare a Double Major must



complete a Double Major declaration form available in the Faculty of Arts General Office or on the Faculty of Arts website. Students should note that for entry into most Majors/Minors, the faculty requirement is a grade of "C" or better in the prerequisite course(s).

For entry into a Major(s)/Minor requiring courses from more than one department, the faculty requirement is an average of "C" or better in all courses which are eligible to count towards the Major(s)/Minor.

For detailed information regarding entry and specific course requirements for Majors and Minors, see the specific listing for the relevant department in Sections 8 and 9 of this Calendar.

Students who have not declared a Major or Minor by the time 60 credit hours of coursework have been completed, will not be able to continue registration until a Major/Minor is declared.

### 3.1.3 Requirements for Continuing in the B.A. General Degree Program

1) By the time students complete 60 credit hours, they should have six credit hours in each of five different subject fields.

2) Students admitted to the Faculty of Arts, must by the time they have completed 60 credit hours have successfully completed or be registered for at least three credit hours in a course with significant content in written English and at least three credit hours in a course in mathematics. (See the Chapter General Academic Regulations and Requirements, Appendix A: List of Approved Written English and Mathematics Courses, or search Aurora Student for the course attributes "Written English Requirement" or "Mathematics Requirement.")

3) Students must meet the minimum performance level as outlined in Section 5.10.

### 3.1.4 Ten Faculty Requirements for Graduating with a B.A. General Degree

1) A student must successfully complete 90 credit hours of courses acceptable for credit in the Faculty of Arts (see Section 5.2) with a minimum grade point average of 2.00 (i.e. "C" or better) on these 90 credit hours.

The 90 credit hours of passed coursework must include the remaining nine faculty requirements.

2) There must be at least six credit hours from subject fields designated Humanities and at least six credit hours from subject fields designated Social Science, and at least six credit hours from subject fields offered by the Faculty of Science (see Section 5.1.1).

3) There must be at least six credit hours completed in each of five different subject fields (as listed in Section 5.1.1). In

addition, a subject field may also satisfy other Bachelor of Arts Degree requirements such as Humanities, or Social Sciences, or Sciences, or Mathematics, or Written English.

4) Major: There must be 30 credit hours which constitute a **Major** in one of the subject fields approved by the Faculty of Arts (see Section 5.1.1). The student must also have a cumulative grade point average of 2.00 (i.e. "C") or better in courses where a final grade is recorded and that are used toward the Major including only the last grade of any course that has been repeated and excluding any failed course(s). A student who declares only one Major must also complete a Minor. A student who declares a Double Major will not be required or allowed to complete a Minor, but must complete five full course equivalents as specified by the Major department (i.e. 30 hours of credit in each subject field). *Students who have questions about a Major in a particular subject are strongly urged to consult an instructor in the appropriate department.* A Major may be declared once the prerequisite is satisfied.

Students who declare and complete a Major in Global Political Economy **will not** be required nor allowed to complete a separate field for a Minor for purposes of satisfying the degree requirements.

5) Minor: There must be 18 credit hours which are in a subject field that is different from that of the declared Major, and which constitute a **Minor** in one of the subject fields approved by the Faculty of Arts (see Section 5.1.1). A student who declares only one Major must also complete a Minor. A student who declares a Double Major will not be required nor allowed to complete a Minor. A Minor may be declared once the prerequisite has been satisfied. A student who has 18 credit hours in more than one subject field can declare only one of them as a Minor (that is, it is not possible to declare a "Double Minor"). No course can be used to satisfy both the Major(s) and the Minor requirement. A Minor may be declared once the prerequisite is satisfied.

6) There must be at least 30 credit hours of coursework taken and successfully completed outside the Major(s) and Minor subject fields. In addition, there must be at least 12 credit hours of coursework taken and successfully completed in any subject acceptable for credit in the Faculty of Arts including courses in the Major(s) and Minor. Note: Students who complete a Double Major will satisfy this 12 credit hour requirement within their Double Major.

7) Normally, a student's Major and Minor cannot be from the same department. (For details on these six exceptions, see the departmental listings in Section 8 for Classics; English, Film, and Theatre; French, Spanish and Italian; German and Slavic Studies; Judaic Studies; and Native Studies.)

8) There must be at least 60 credit hours that have been taught by the Faculty of Arts (may include up to 24 credit hours from the Department of Mathematics, Marcel A. Desautels Faculty of Music List A or Art History courses considered as Humanities, see Section 5.1.1), or which have been accepted on transfer as equivalent to courses taught by the Faculty of Arts.



9) There must be at least 30 credit hours numbered at or above the 2000 level.

10) Residency Requirement: A student in the B.A. General Degree Program must complete University of Manitoba residency requirements (see Section 5.3 for details).

### 3.2 Advanced Degree Program, 3.2.1 Its General Purpose

This program is intended primarily to serve students who desire a general education along with a reasonable degree of specialization in one area of study through the Major. The Advanced Degree in the Faculty of Arts involves taking courses in what are traditionally referred to as the "liberal" arts. The goal of a liberal arts education is to provide students with an education in the humanities and social sciences and at the same time prepare them for future careers. An Arts education is intended to provide students with "employability skills" that are highly valued by employers and needed in the contemporary workplace. Some of these skills include: reading, writing, listening, speaking effectively, knowledge of language, critical thinking, problem solving, basic numeracy, information literacy, and an appreciation of our cultural, political, and economic milieu.

While most graduate programs require students complete an Honours Degree, it may be possible to enter a graduate program on the basis of the Advanced Degree. Students should discuss this possibility with a departmental graduate program advisor.

#### 3.2.2 Entrance to the B.A. Advanced Degree Program

1) To enter an Advanced Degree Program, a student must have successfully completed six credit hours in each of four different subject fields (see Section 5.1.1), and also complete an application form which is available in the Faculty of Arts General Office or on-line at <http://umanitoba.ca/faculties/arts/student/index.html> and have it approved by an academic advisor.

Once admitted to the Faculty of Arts it is possible to enter this program at any point up to one month prior to graduation provided the student has successfully completed six credit hours in each of four different subject fields.

2) All students are *required, upon entering the Advanced Degree Program, to declare a Major and Minor*. Students may also declare a second or Double Advanced Major in lieu of a Minor. Students who want to declare a Double Advanced Major must complete a Double Advanced Major declaration form available in the Faculty of Arts General Office or on the Faculty of Arts website. Students should note that for entry into a Major(s) requiring courses from only one department, the faculty requirement is a grade of "C" or better in the prerequisite course(s).

For entry into a Major(s) requiring courses from more than one department, the faculty requirement is that the student

must have an average of "C" or better in all courses which are eligible to count towards the Major.

For additional information regarding entrance into Majors (such as which courses are eligible for counting as fulfilling the Major) see the specific list-ing for the relevant department in Sections 8 and 9. Students with questions about an Advanced Major in a particular subject should consult an instructor in the appropriate department.

3) For entry to the Minor a grade of "C" or better in the prerequisite course(s) is required.

#### 3.2.3 Requirements for Continuing in the B.A. Advanced Degree Program

1) Students admitted to the Faculty of Arts, must by the time they have completed 60 credit hours have successfully completed or be registered for at least three credit hours in a course with significant content in written English and at least three credit hours in a course in mathematics. (See the Chapter General Academic Regulations and Requirements, Appendix A: List of Approved Written English and Mathematics Courses, or search Aurora Student for the course attributes "Written English Requirement" or "Mathematics Requirement.")

2) Students must meet the minimum performance level as outlined in Section 5.10.

#### 3.2.4 Ten Faculty Requirements for Graduating with a B.A. Advanced Degree

1) A student must successfully complete 120 credit hours from among the courses acceptable for credit in the Faculty of Arts (see Section 5.2), with a minimum grade point average of 2.00 (i.e. "C" or better) on these 120 credit hours. (Students who choose to complete a Double Advanced Major will be required to complete more than 120 credit hours.)

The 120 credit hours of passed coursework must include the remaining nine faculty requirements.

2) There must be at least six credit hours in Humanities subject fields and at least six credit hours in Social Science subject fields, and at least six credit hours in courses taught by the Faculty of Science (see Section 5.1.1).

3) There must be at least six credit hours completed in each of five different subject fields (as listed in Section 5.1.1). In addition, a subject field may also satisfy other Bachelor of Arts requirements such as Humanities, or Social Sciences, or Sciences, or Mathematics, or Written English.

4) Major: There must be at least 48 credit hours which constitute a **Major** in one of the subject fields approved by the Faculty of Arts (see Section 5.1.1). The student must have a grade point average of 2.00 (i.e. "C") or better in courses where a final grade is recorded that are used toward the Major including only the last grade of any course that has



been repeated and excluding any failed course(s). A student who declares only one Advanced Major must also complete a Minor. A student who declares a Double Advanced Major will not be required nor allowed to complete a Minor, but must complete the Double Advanced Major in accordance with the requirements as specified by the Major department. A Major may be declared once the prerequisite has been satisfied.

**Note:** Not every department offers an Advanced Major. See the departmental listings in Sections 8 and 9 for information.

Students with an Advanced Major in Global Political Economy **will not** be required nor allowed to complete a Minor for purposes of satisfying the degree requirements.

5) Minor: There must be 18 credit hours in a field that is different from the Advanced Major, and which constitute a **Minor** in one of the subject fields approved by the Faculty of Arts (see Section 5.1.1). A student who declares only one Advanced Major must also complete a Minor. A student who declares a Double Advanced Major will not be required nor allowed to complete a Minor. No course can be used to satisfy both the Advanced Major(s) and the Minor requirement. A student having 18 credit hours in more than one subject field can declare only one of them as his/her Minor. A Minor may be declared once the prerequisite has been satisfied.

6) A student who declares a single Advanced Major with a Minor must have at least 42 credit hours in subjects other than those used towards the Advanced Major and Minor subject fields. Similarly, a student who declares a Double Advanced Major must have at least 42 credit hours in subjects other than those used towards their Double Advanced Major subject fields. In addition, there must be at least 12 credit hours of coursework taken and successfully completed in any subject acceptable for credit in the Faculty of Arts including courses in the Major and Minor. Note: Students who complete a Double Advanced Major will satisfy this 12 credit hour requirement within their double Major.

7) Normally, a student's Advanced Major and Minor cannot be from the same department. (For exceptions, see the departmental listings, in Section 8, for Classics; English, Film and Theatre; French, Spanish and Italian; German and Slavic Studies; Judaic Studies; and Native Studies.)

8) There must be at least 81 credit hours that have been taught by the Faculty of Arts (may include up to 36 credit hours from the Department of Mathematics, Marcel A. Desautels Faculty of Music List A or Art History courses considered as Humanities, see Section 5.1.1), or which have been accepted on transfer as equivalent to courses taught by the Faculty of Arts.

9) There must be at least 42 credit hours numbered at or above the 2000 level.

10) Residency Requirement: A student in the B.A. Advanced Degree Program must complete University of Manitoba residency requirements (see Section 5.3 for details).

### 3.3 Honours Degree Program, 3.3.1 Its General Purpose

This program is designed to provide a high degree of specialization in a subject field. The entrance requirements and evaluation of performance are at a higher level than the General or Advanced Degree programs. The Honours Degree program is the preferred program for students seeking entrance to graduate study.

#### 3.3.2 Entrance to the B.A. Honours Degree Program

To enter an Honours Degree program, a student must complete an application form which is available in the Faculty of Arts General Office. Students must have successfully completed six credit hours in each of four different subject fields (see Section 5.1.1), with a minimum grade point average of 3.0 (3.25 for entry to Psychology) on all courses including failed and repeated courses. In addition, students are to have a grade point average of 3.0 (3.25 for entry to Psychology) or better in all course(s) in the intended Honours subject field(s) including failed and repeated courses. Students applying for Honours History must have a grade of "B" or higher in all 3000 and 4000 level History courses.

#### 3.3.3 Requirements for Continuing in the B.A. Honours Degree Program

1) Prior to each registration, Honours students must have their courses approved by the department in person, and then by the Faculty of Arts General Office, and cannot make any subsequent changes without receiving prior permission from their department and the Faculty General Office.

2) Students admitted to the Faculty of Arts, must by the time they have completed 60 credit hours have successfully completed or be registered for at least three credit hours in a course with significant content in written English and at least three credit hours in a course in mathematics. (See the Chapter General Academic Regulations and Requirements, Appendix A: List of Approved Written English and Mathematics Courses, or search Aurora Student for the course attributes "Written English Requirement" or "Mathematics Requirement.").

3) To continue in an Honours Degree program, the student must maintain a degree grade point average of 3.0 (3.25 for Psychology) at each point of assessment on all courses where a final grade is recorded (as well as meet any additional departmental requirements there may be). In order to continue in Honours History students must also maintain a "B" grade or higher in each History course at the 3000 and 4000 levels.

Students who fail to maintain the required minimum degree grade point average are required to withdraw from the Honours Degree program. They will be automatically placed in the General Degree Program and will have the following academic assessment permanently recorded on their transcript: "Required to Withdraw from the Honours



Program.” These students may be eligible to apply to the Advanced Degree Program.

### 3.3.4 Four Faculty Requirements for Graduating with a B.A. Honours Degree

It should be noted that not every department has an Honours Degree program. For specific information on available single and Double Honours, please consult the specific listing for the relevant department in Section 8.

Note: Students in an Honours Degree program who satisfy the requirements for a Minor (in accordance with the Minor requirements listed under the B.A. General Degree; Section 3.1.4, point 5 - Minor) may request to have the Minor recorded on their transcript. These students must come to the Faculty of Arts General Office to formally declare their intention to have their Minor recorded on their transcript.

1) The number of credit hours which a student must successfully complete in order to receive an Honours Degree ranges from 108 to 120, depending on the specific

requirements of the individual department. Information on the specific course requirements for the individual departments will be found in Section 8.

2) In order to graduate a student in the B.A. Honours Degree program must satisfy the University of Manitoba residency requirements (see Section 5.3 for details) and attain a minimum degree grade point average of 3.0 on all coursework where a final grade is recorded.

3) Included among the courses presented for graduation there is to be at least six credit hours completed in each of five different subject fields (as listed in Section 5.1.1).

4) Among the courses presented for graduation there must be at least six credit hours in Humanities subject fields and six credit hours in Social Science subject fields, and at least six credit hours in courses offered by the Faculty of Science (see Section 5.1.1).

### 3.4 Bachelor of Arts Degree Program Requirements Chart,

GENERAL DEGREE PROGRAM (90 Credit Hours)	ADVANCED DEGREE PROGRAM (120 Credit Hours)	HONOURS DEGREE PROGRAM (108-120 Credit Hours)
<b>REQUIREMENT 1: Major(s) or Honours</b> (See Section 8 for Major and Honours requirements)		
- minimum 30 credit hours  - grade point average of 2.00 on all courses taken for purposes of satisfying the Major	- minimum 48 credit hours (some departments require more)  - grade point average of 2.00 on all courses taken for purposes of satisfying the Major	- Varies by Honours subject field(s)
<b>REQUIREMENT 2: Minor</b> (See Section 8 for Minor requirements)		
- minimum 18 credit hours; except when Major is Global Political Economy	- minimum 18 credit hours; except when Major is Global Political Economy	- optional Minor (see note in Section 3.3.4)
<b>REQUIREMENT 3: Options</b>		
- minimum 30 credit hours outside student's chosen Major(s) and Minor  - minimum 12 credit hours in area of choice	- minimum 42 credit hours outside student's chosen Major(s) and Minor  - minimum 12 credit hours in area of choice	- ancillary options: minimum 24 to 30 credit hours over years 2, 3, and 4
Within the above 3 requirements, students must also satisfy the following requirements. Note: a course may satisfy more than one requirement.		
<b>REQUIREMENT 4: Written English and Math</b>		
- Written English and Math Requirement (minimum 3 credit hours in each)	- Written English and Math Requirement (minimum 3 credit hours in each)	- Written English and Math Requirement (minimum 3 credit hours in each)
<b>REQUIREMENT 5: Humanities Requirement</b> (See Section 5)		
- 6 credit hours from subjects identified as Humanities	- 6 credit hours from subjects identified as Humanities	- 6 credit hours from subjects identified as Humanities
<b>REQUIREMENT 6: Social Science Requirement</b> (See Section 5)		
- 6 credit hours from subjects identified as Social Sciences	- 6 credit hours from subjects identified as Social Sciences	- 6 credit hours from subjects identified as Social Sciences
<b>REQUIREMENT 7: Sciences Requirement</b> (See Section 5)		
- 6 credit hours from course subjects	- 6 credit hours from course subjects	- 6 credit hours from course subjects



taught by the Faculty of Science	taught by the Faculty of Science	taught by the Faculty of Science
<b>REQUIREMENT 8: General Requirements</b>		
- 60 credit hours of courses must be taken from courses taught by the Faculty of Arts (may include 24 credit hours of Mathematics, Music or Art History courses)  - 30 credit hours must be at the 2000 level or higher  - 6 credit hours (c.h.) in each of 5 subject areas (e.g., 6 c.h. Psychology, 6 c.h. Economics, 6 c.h. Computer Science, 6 c.h. French, 6 c.h. Women's and Gender Studies)	- 81 credit hours of courses must be taken from courses taught by the Faculty of Arts (may include 36 credit hours of Mathematics, Music or Art History courses)  - 42 credit hours must be at the 2000 level or higher  - 6 credit hours (c.h.) in each of 5 subject areas (e.g., 6 c.h. Psychology, 6 c.h. Economics, 6 c.h. Computer Science, 6 c.h. French, 6 c.h. Women's and Gender Studies)	- 6 credit hours (c.h.) in each of 5 subject areas (e.g., 6 c.h. Psychology, 6 c.h. Economics, 6 c.h. Computer Science, 6 c.h. French, 6 c.h. Women's and Gender Studies)
<b>REQUIREMENT 9: Residency Requirements</b>		
- degree: 48 credit hours or the final 30 credit hours must be taken at the University of Manitoba  - Major(s): 18 credit hours at the University of Manitoba	- degree: 60 credit hours must be taken at the University of Manitoba  - Major(s): 30 credit hours at the University of Manitoba on Major requiring 48 to 57 credit hours; or 36 credit hours at the University of Manitoba on Major requiring more than 57 credit hours	- degree: must satisfy a residency requirement as specified in Section 5.3  - Honours subject(s): 33 credit hours at the University of Manitoba on single Honours requiring 54 to 69 credit hours; or 39 credit hours at the University of Manitoba on single Honours requiring more than 69 credit hours; or 24 credit hours at the University of Manitoba on Double or Joint Honours requiring 42 to 45 credit hours; or 21 credit hours at the University of Manitoba on Double or Joint Honours requiring less than 42 credit hours; or 33 credit hours at the University of Manitoba on Double or Joint Honours requiring more than 45 credit hours
<b>REQUIREMENT 10: Graduating Grade Point Average (GPA)</b>		
- 2.00 grade point average on 90 credit hours of passed coursework offered for degree credit	- 2.00 grade point average on 120 credit hours of passed coursework offered for degree credit	- 3.00 grade point average on total passed credit hours offered for degree credit

**SECTION 4: Admission Requirements and Basic Faculty Regulations for the B.A. Integrated Studies (B.A.I.S.) Degree Program**

**4.1 General Purpose,**

The Bachelor of Arts Integrated Studies is a 90 credit hour degree program which is geared to serve working adults who have completed some post secondary education. The degree requires areas of Concentration rather than the traditional Major/Minor requirement, providing a more flexible path for degree completion but also ensuring academic rigor (e.g., appropriate writing and quantitative skills, breadth requirements, and an appropriate percentage of upper level courses).

**4.2 Admission Requirements for the B.A.I.S. Degree Program, Students must complete one of the following:**

a) University of Manitoba Certificate in Financial and Management Accounting (FMA) with a minimum cumulative grade point average of 2.5.

b) University of Manitoba Certificate Program in Human Resources Management (HRM) with a minimum cumulative grade point average of 2.5.

c) University of Manitoba Certificate in Adult and Continuing Education (CACE) with a minimum cumulative grade point average of 2.5.

d) Canadian Institute of Management Certificate Program in Management and Administration (CIM) from any accredited post-secondary institution with a minimum cumulative grade point average of 2.5.

e) University of Manitoba diploma program (as defined by the Non-Degree Program Taxonomy approved by Senate) or a diploma completed at any accredited post-secondary institution.



f) Successful completion of a minimum of 24 credit hours of university level coursework with a cumulative grade point average of 2.0. Students who have not achieved a 2.0 cumulative grade point average may be eligible for special consideration.

Students who have exceeded 30 credit hours of "F" grades or who have more than a combined 42 credit hours of "F" and "D" grades are not admissible. Students may contact the Faculty of Arts for further information and advice.

**Applicants must also submit with their application for admission all of the following:**

-A resumé providing evidence of normally three (3) years of full-time workplace experience (i.e., ≥ 30 hours/week) preferably with the same employer. [Applicants who do not strictly fall into this definition of workplace experience may request special consideration from the B.A. Integrated Studies Admissions Committee.]

-Two letters of support (normally one must be from the current or most recent employer). [Applicants who are unable to supply the two letters of support as stipulated may request special consideration from the B.A. Integrated Studies Admissions Committee to consider alternate sources for letters of support.]

**4.3 General Structure of the B.A.I.S. Degree Program,**

The Bachelor of Arts Integrated Studies Program is comprised of 90 credit hours divided into three components: Foundation Courses (21 credit hours), Area of Concentration (18 credit hours) and options (51 credit hours).

**Foundation Courses**

ARTS 1110	Introduction to University	3
EDUA 1560	Adult Learning and Development	3
SWRK 2080 or ENGL 0930	Interpersonal Communication Skills English Composition	3 3
A three credit hour course that satisfies the mathematics requirement <sup>1</sup>		3
ARTS 1160	Leadership: An Interdisciplinary Approach	3
Six credit hours of introductory courses from the Departments of Psychology or Sociology or Anthropology or Political Studies <sup>2</sup>		6
Total credit hours		21

**Notes:**

<sup>1</sup> See Appendix A, List of Approved Written English and Mathematics courses found under the heading General Academic Regulations and Requirements in the Undergraduate Calendar.

<sup>2</sup> Students who wish to take courses beyond the 1000 level in these departments should consult the course descriptions to ensure the necessary prerequisites are satisfied.

Students may not substitute another course for a Foundation course.

**Area of Concentration**

Each student must complete the course requirements of at least one Concentration. For purposes of this degree program all Minor programs offered by the Faculty of Arts

-A letter of intent. The letter of intent must be no fewer than 250 and no more than 1000 words and include the applicant's rationale and suitability to enter the program. For example, why has the applicant chosen this program instead of other degree programs at the University of Manitoba? Why does the applicant see a good fit between herself/himself and the program? How does the applicant envision successful completion of this degree enhancing her/his career development? The letter of intent and resumé must provide evidence of satisfactory writing and problem-solving skills.

Students who hold a first undergraduate degree in the Faculty of Arts may not apply for the B.A. Integrated Studies Degree Program.

For detailed admission information, including required averages for admission and application deadline dates, please refer to the Faculty of Arts Applicant Information Brochure at

[http://www.umanitoba.ca/student/admissions/media/arts\\_bull etin.pdf](http://www.umanitoba.ca/student/admissions/media/arts_bull etin.pdf).

will be referred to as Concentrations. All Concentrations consist of 18 credit hours of required or specified courses. There are some Concentrations that are not offered as Minors. For a listing of the Minors and Concentrations offered by the respective departments in the Faculty of Arts, please see Section 1.2 and also refer to the



departmental entries in Section 8 and 9. For entry into most Concentrations, the faculty requirement is that the student must have a grade of "C" or better in the prerequisite course(s).

A student in the B.A. Integrated Studies Degree Program may also fulfill the requirements of a Concentration by completing the specified requirements of Minor programs offered by other Faculties and Schools providing the Minor consists of a minimum of 18 credit hours. A Minor program offered by other Faculties/Schools will be referred to as a Concentration for purposes of the B.A. Integrated Studies Degree Program. For details on such Concentration (Minor) programs please refer to the relevant Faculty/School's chapter in the Academic Calendar.

A Concentration may be declared once the prerequisite has been satisfied. A course that satisfies the Foundation requirement of the program cannot also be used towards a Concentration. An alternate course/credit hours within the Concentration field must be completed. For example, if PSYC 1200 (6) is taken to satisfy the Foundation requirement, and the student has chosen to complete a Psychology Concentration, then PSYC 1200 will not form part of the 18 credit hours required for the Concentration. The student will complete an additional 6 credit hours of other Psychology courses in lieu of PSYC 1200.

Students who wish to take additional courses from a second Concentration may do so within their elective component. Students who complete the requirements of a second Concentration may submit a written request to the Dean's Office to have a second Concentration recorded on their transcript.

#### Options

Students must complete 51 credit hours of options outside the Foundation courses and those courses used to satisfy an area of Concentration.

#### 4.4 Requirements for Continuing in the B.A.I.S. Degree Program,

1) By the time students complete 60 credit hours, they must normally have three credit hours in each of five different subject fields.

2) Students must by the time they have completed 60 credit hours have successfully completed or be registered for at least three credit hours in a course with significant content in written English and at least three credit hours in a course in mathematics. (See the Chapter in the Undergraduate Calendar entitled General Academic Regulations and Requirements, Appendix A: List of Approved Written English and Mathematics Courses, or search Aurora Student for the course attributes "Written English Requirement" or "Mathematics Requirement."

3) Students must meet the minimum performance level as outlined in Section 5.10.

#### 4.5 Eight Faculty Requirements for Graduating with a B.A.I.S. Degree,

1) A student must successfully complete 90 credit hours of coursework acceptable for credit in the Faculty of Arts (see Section 5.2) with a minimum grade point average of 2.00 (i.e. "C" or better) on these 90 credit hours.

The 90 credit hours of passed coursework must include the remaining seven faculty requirements.

2) There must be six credit hours from subject fields designated Humanities and six credit hours from subject fields designated Social Science, and six credit hours from subject fields offered by the Faculty of Science (see Section 5.1.1).

3) There must be at least three credit hours completed in each of five different subject fields (as listed in Section 5.1.1). In addition, a subject field may also satisfy other B.A.I.S requirements such as Humanities, or Social Sciences, or Sciences, or Mathematics, or Written English.

4) Concentration: There must be 18 credit hours which constitute a Concentration in one of the subject fields approved by the Faculty of Arts (see Section 5.1.1) or by other Faculties and Schools. A Concentration may be declared once the prerequisite has been satisfied. A student who has 18 credit hours in more than one subject field can declare only one of them as a Concentration. No course can be used to satisfy both a Foundation requirement and the Concentration requirement. A student who has completed the requirements for a second Concentration may apply at the Faculty of Arts General Office to have the second Concentration recorded on their transcript.

5) There must be at least 51 credit hours of options which are taken and successfully completed in subject fields outside the Foundation and Concentration courses.

6) There must be at least 30 credit hours that have been taught by the Faculty of Arts (may include up to 12 credit hours from the Department of Mathematics, Marcel A. Desautels Faculty of Music List A or Art History courses considered as Humanities, see Section 5.1.1) or which have been accepted on transfer as equivalent to courses taught by the Faculty of Arts.

7) There must be at least 15 credit hours numbered at or above the 2000 level plus 6 credit hours at or above the 3000 level.

8) Residency Requirement: A student in the B.A. Integrated Studies degree program must complete University of Manitoba residency requirements (see Section 5.3 for details).

4.6 Additional Faculty Regulations and Policies, Students in the B.A. Integrated Studies Degree Program are subject to the regulations and policies found in Section 5, Section 6, Section 7, Section 8 and Section 9.



## SECTION 5: Additional Faculty Regulations and Policies Applicable to All Degree Programs in the Faculty of Arts

### 5.1 Recognized Subject Fields,

#### 5.1.1 Five-subject Field Requirement and Humanity/Social Science/Science Requirement

Faculties and Schools offer a number of courses covering a variety of subjects. To satisfy the subject field requirement for any B.A. Degree (with the exception of the B.A. Integrated Studies) a student must complete 6 credit hours in each of 5 different course subjects. For example: 6 credit hours in Psychology plus 6 credit hours in German plus 6 credit hours in Mathematics plus 6 credit hours in Music plus 6 credit hours in Biological Sciences. Students in the B.A. Integrated Studies Degree Program must complete 3 credit hours in each of 5 different course subjects.

Each course subject in the Faculty of Arts has been further categorized as either a Humanity or Social Science. Courses offered by the Faculty of Science will satisfy the Science requirement. Therefore a course may satisfy both the subject field requirement as well as the requirement for the Humanity/Social Science/Science.

Listed below are the categories of Humanities, Social Sciences, Sciences and the course subjects that belong to each category.

#### Humanities

1) Course subjects taught by the Faculty of Arts that can be used towards the **Humanities** requirement: Arabic, Asian Studies, Canadian Studies, Catholic Studies, Classical Studies, English (excluding ENGL 0930, ENGL 0940, ENGL 2000, ENGL 2001), Film Studies, French, German, Greek, Hebrew, History, Hungarian, Icelandic, Italian, Judaic Civilization, Latin, Native Languages, Native Studies, Philosophy, Polish, Portuguese, Religion, Russian, Spanish, Theatre, Ukrainian, and Yiddish. In addition the following courses may be used: Women's and Gender Studies WOMN 1500, WOMN 2530, WOMN 2570, WOMN 2600, WOMN 3600 and WOMN 3620.

2) Course subjects offered by other units which can be used towards the **Humanities** requirement: Music (i.e. except ensemble courses) and History of Art (i.e. all courses listed with course prefix FAAH). (For details, see Section 9).

#### Social Sciences

3) Course subjects taught by the Faculty of Arts that can be used towards the **Social Science** requirement: Anthropology, Economics, Global Political Economy courses GPE 2700, GPE 4700, Labour Studies, Linguistics, Political Studies, Psychology, and Sociology. In addition the following courses may be used: Women's and Gender Studies WOMN 1600, WOMN 2500, WOMN 2510, WOMN 2560, WOMN 3100, WOMN 3510, WOMN 3550, WOMN 3560 and Others

ARTS 1160. Note: Geography courses completed prior to September 1, 2006 will be considered a Social Science.

#### Sciences

4) Course subjects taught by the Faculty of Science that can be used towards the **Science** requirement: Astronomy, Biological Sciences, Biotechnology, Botany, Chemistry, Computer Science, Forensic Science, Mathematics, Microbiology, Physics, Statistics, and Zoology. (For details, see the Faculty of Science chapter of this *Calendar*.) Note: Environmental Science and Geological Sciences courses completed prior to September 1, 2006 will be considered a Science.

#### 5.1.2 Major, Minor (Concentration) or Honours Programs

1) The Faculty of Arts offers various Majors, Minors (Concentrations) and Honours programs. For a listing of the programs see Section 1.2 and also refer to the respective departmental entries in Section 8 and 9.

2) Major and Minor (Concentration) programs offered by other Faculties or Schools are listed in Section 9. These include a General Major, Advanced Major and Minor (Concentration) offered by the Department of Mathematics, a General Major and Minor (Concentration) in History of Art offered by the School of Art, and a Minor (Concentration) offered by the Marcel A. Desautels Faculty of Music.

An Arts student may declare a Minor (Concentration) (dependent on the student's program) offered by any Faculty and School providing the Minor (Concentration) program consists of a minimum of 18 credit hours. For details on those Minor (Concentration) programs please refer to the relevant Faculty/ School's chapter in this *Calendar*.

#### 5.2 Courses Acceptable for Credit in the Faculty of Arts,

In addition to all courses offered by the Faculty of Arts there are two other categories of courses acceptable for credit in the Faculty of Arts:

##### 5.2.1 Courses Offered by Other Faculties or Schools at the University of Manitoba:

Effective September 2007, all degree credit courses offered by other Faculties or Schools at the University of Manitoba are acceptable for credit in Arts (**excludes Pass/Fail courses**) subject to the Faculty of Arts overall degree requirements.

If a student was registered in another faculty or school within the University of Manitoba prior to registering in the Faculty of Arts, all courses in which the student received a final grade will be treated in the same way as they would have been had they been taken by a student already registered in the Faculty of Arts. That is, all of these courses will count in determining eligibility for admission to Arts in accordance with Sections 2.1, 2.2 and 5.10 and they will all be taken into account when determining the student's grade point averages in accordance with Sections 5.8 and 5.10. In



addition, they will all count towards the minimum number of credit hours required for graduating, provided the student received a passing grade in each of them, and the courses did not conflict with some other graduation or continuing regulation (such as the Residency Requirement).

### 5.2.2 Courses Offered at Other Universities and Colleges:

Effective September 2007, all courses offered at other universities and colleges which are evaluated as equivalent to University of Manitoba courses (**excludes Pass/Fail courses**) will be used when determining eligibility for admission and transfer credit.

There are two groups of courses that are taken at other universities or colleges and which can be used for credit in the Faculty of Arts at the University of Manitoba, namely: a) those taken by students who are already registered in the Faculty of Arts at the University of Manitoba, and b) those taken by students prior to transferring to the Faculty of Arts at the University of Manitoba.

a) Students who are already registered in the Faculty of Arts at the University of Manitoba, and who wish to take courses at another university or college to count towards their University of Manitoba degree are required to obtain a Letter of Permission from the Registrar's Office prior to registering at that other institution; see the chapter, General Academic Regulations and Requirements. The Letter of Permission will not be approved for a student who has not completed at least 24 hours of coursework at the University of Manitoba or who is in academic jeopardy or on academic suspension. As of September 1999 grades earned in courses at other universities are taken into account in the cumulative hours when determining the Grade Point Averages at the University of Manitoba. Grades earned at other universities will not be used in determining eligibility for awards (see Section 5.11 and 5.12 for details).

b) All completed courses that are deemed acceptable for credit in any degree program at the University of Manitoba (**excludes Pass/Fail courses**) which were taken by a student registered at another university or college prior to transferring to the Faculty of Arts, will be used when determining eligibility for admission and transfer credit. That is, all of these courses will count in determining admissibility, in accordance with Sections 2.1, 2.2 and 5.10.

As of September 1999 the applicable courses (credits and attempts) in both a) and b) are included on the University of Manitoba record, the external courses are counted as attempts and external grades are taken into account when determining the University of Manitoba grade point average as well as count towards the maximum number of "F" and "D" grades permitted in an Arts degree (see Section 5.10). Grades earned at other universities will appear on the University of Manitoba transcript and will not be used in determining eligibility for awards (see Section 5.11 and 5.12 for details). There is no limit on attempts in any degree program.

All completed courses that are deemed acceptable for credit in any degree program at the University of Manitoba (**excluding Pass/Fail courses**), which were taken by a student at another university or college prior to transferring to the Faculty of Arts and are outside the ten-year period prior to admission and registration in the Faculty of Arts, will not be used for purposes of determining admissibility, advanced standing or transfer credit. (Some exceptions may be considered for students in the B.A. Integrated Studies Degree Program.)

Students who wish to request a review or reassessment of transfer credit must do so within eight months of the initial determination of transfer of credit to the University of Manitoba.

### 5.3 Residency Requirement.

As indicated in Section 3 and Section 4, each of the four undergraduate degree programs has a residency requirement which requires that a minimum number of credit hours must be taken at the University of Manitoba itself in order to qualify for the degree. Effective September 2009, students admitted to the Faculty of Arts B.A. General, Advanced and Honours Degree Programs will also be required to satisfy a residency requirement on the Major(s), Advanced Major(s) or Honours subject(s) in addition to the residency requirement on the degree. Similarly students admitted to the B.A. Integrated Studies Degree Program will be required to satisfy a residency requirement on the Concentration in addition to a residency requirement on the degree.

#### 1) B.A. General Degree

a) Degree: There are two ways in which the Residency Requirement for the B.A. General Degree may be satisfied: either by successfully completing at the University of Manitoba no fewer than 48 credit hours of the required 90 credit hours (these 48 credit hours may be taken at various points in the student's career); or by successfully completing at the University of Manitoba itself no fewer than the last 30 credit hours of the required 90 credit hours.

b) Major: A minimum of 18 credit hours of the 30 credit hours required for the Major must be successfully completed at the University of Manitoba or through an approved University of Manitoba Exchange Program.

#### 2) B.A. Advanced Degree

a) Degree: To receive the B.A. Advanced Degree, the student must successfully complete at least 60 credit hours of the required 120 credit hours at the University of Manitoba.

b) Advanced Major: Students must successfully complete at the University of Manitoba or through an approved University of Manitoba exchange program the hours of coursework in their Advanced Major as noted below:



- In an Advanced Major requiring 48 to 57 credit hours, 30 credit hours must be completed at the University of Manitoba or through an approved University of Manitoba Exchange Program.
- In an Advanced Major requiring more than 57 credit hours, 36 credit hours must be completed at the University of Manitoba or through an approved University of Manitoba Exchange Program.

**3) B.A. Honours Degree**

a) Degree: In order to graduate with a B.A. Honours Degree, students must take and successfully complete the hours of coursework offered by the University of Manitoba as noted below:

- In Honours programs requiring 108 credit hours, 48 credit hours must be from acceptable courses offered by the University of Manitoba;
  - In Honours programs requiring 114 credit hours, 54 credit hours must be from acceptable courses offered by the University of Manitoba;
  - In Honours programs requiring 120 credit hours, 60 credit hours must be from acceptable courses offered by the University of Manitoba.
- b) Honours Subject(s): Students must successfully complete at the University of Manitoba or through an approved University of Manitoba exchange program the hours of coursework in their Honours subject(s) as noted be-low:
- In a single Honours subject requiring 54 to 69 credit hours, 33 credit hours must be completed in the Honours subject.
  - In a single Honours subject requiring more than 69 credit hours, 39 credit hours must be completed in the Honours subject.
  - In a double or joint Honours subject requiring 42 to 45 credit hours in one Honours subject, 24 credit hours must be completed in that Honours subject.
  - In a double or joint Honours subject requiring less than 42 credit hours in one Honours subject, 21 credit hours must be completed in that Hon-ours subject.
  - In a double or joint Honours subject requiring more than 45 credit hours in one Honours subject, 33 credit hours must be completed in that Hon-ours subject.

<b>Year Equivalent</b>	<b>Credit Hours Passed (General/Integrated Studies Degree)</b>	<b>Credit Hours Passed (Advanced/Honours Degree)</b>
1	fewer than 24 credit hours	fewer than 24 credit hours
2	24 credit hours to fewer than 54 credit hours	24 credit hours to fewer than 54 credit hours

c) Once admitted to an Honours program, students are expected to take all their courses at the University of Manitoba. For information on exceptions to this requirement, the student should consult the Faculty of Arts General Office.

**4) B.A. Integrated Studies Degree**

- a) Degree: To receive the B.A. Integrated Studies Degree, the student must successfully complete at the University of Manitoba no fewer than 36 credit hours of the required 90 credit hours (these 36 credit hours may be taken at various points in the student's career).
- b) Concentration(s): A minimum of 9 credit hours of the 18 credit hours required for the Concentration must be successfully completed at the University of Manitoba or through an approved University of Manitoba Exchange Program.

**Residency Requirement Université de Saint-Boniface:**

In order to satisfy the University of Manitoba, Faculty of Arts residency requirement, students who transfer from Université de Saint-Boniface must complete the following minimum hours at the Fort Garry Campus.

- 1) In order to receive the B.A. (General) or (Advanced) Degree, the student must successfully complete at least 30 credit hours at the Fort Garry campus.
- 2) In order to receive the B.A. (Honours) Degree, the student must successfully complete the hours of coursework offered at the Fort Garry campus as noted below:
  - In Honours programs requiring 108 credit hours, 24 credit hours of acceptable coursework must be completed at the Fort Garry campus.
  - In Honours programs requiring 114 credit hours, 24 credit hours of acceptable coursework must be completed at the Fort Garry campus.
  - In Honours programs requiring 120 credit hours, 30 credit hours of acceptable coursework must be completed at the Fort Garry campus.

**5.4 Year-of-Study Equivalents,**

A student's progress towards a degree is measured in terms of credit hours passed rather than years of study completed. The following table may be used to determine the year equivalent.



3	54 credit hours or more	54 credit hours to less than 84 credit hours
4	not applicable	84 credit hours or more

### 5.5 Maximum Number of Courses During a Term,

Normally a student may attempt a maximum of 15 credit hours during a Fall or Winter term or a maximum of 18 credit hours during the Summer Session. If a student has taken the maximum credit hours in the previous term and has obtained a degree grade point average of 2.75 and is in good standing, he/she may apply at the Faculty of Arts General Office to be allowed to take 3 additional credit hours per term.

### 5.6 Prerequisite, Corequisite, and Course Availability,

**Prerequisite:** Minimum grades of "C" are required in all courses listed as prerequisites, except as otherwise noted in the course descriptions published in each department and program section of this chapter. If a course is a prerequisite for a second course, the prerequisite must be met in order to continue in the second course.

Some course descriptions will indicate that a specific course is a pre- or co-requisite for the course in which you wish to register. If you have not previously taken the specific course, you may register for it in the same term.

**Corequisite:** Where a course identifies another course as a corequisite, both courses must be taken at the same time.

**Course availability:** All courses listed in this *Calendar* are not offered every year. The course(s) being offered for the current terms are available at [www.umanitoba.ca](http://www.umanitoba.ca)

### 5.7 Challenge for Credit,

Some departments in the Faculty of Arts offer courses by means of challenge for credit. Since the courses offered in this manner may vary from year to year, students interested in this method of attaining credit should consult the Challenge for Credit section in the Faculty of Arts Registration Information located on the Faculty of Arts website. The Academic Schedule in the front of this *Calendar* contains the relevant registration deadline dates appropriate to challenge for credit. Students on academic warning or academic suspension are not permitted to challenge courses for credit.

### 5.8 Repeating a Course,

A student will normally be permitted to repeat a course only once. If a student wishes to repeat a course, he/she should be aware of the following:

- To repeat a course, a student must request permission to do so from the Faculty of Arts General Office or on-line at <http://umanitoba.ca/faculties/arts/student/index.html>.

- All completed courses will appear on the student's transcript and will be used to calculate the student's attempted hours. Courses that have been repeated will appear on the transcript but only the grade on the last attempt will be used in the calculation of the grade point average in the Major field, the cumulative grade point average and in the calculation of the grade point average required for the degree.

- Repeating a course will not remove the original course or grade from the transcript.

- All courses with "F" and "D" grades that are repeated count towards the limit of "F" and "D" grades permitted in an Arts degree as outlined in Section 5.10.

### 5.9 Statute of Limitations,

Students who have not been registered at the University of Manitoba (or any other post-secondary institution) for a period of five years or longer immediately preceding an admission to Arts may submit a written appeal to the General Office to be allowed to "start afresh" a Faculty of Arts degree. If the appeal is granted, all courses listed on the University of Manitoba record will remain but all previous work will **not** count/apply towards satisfying degree requirements nor affect the degree GPA calculation. The following notation will appear under the term of readmission:

"Having discontinued attendance at post-secondary institutions for a period of five years or more, this student has been permitted to start afresh on recommendation of the Dean. All previous credits have been forfeited."

### 5.10 Maximum Number of "F" and "D" Grades Permitted on Courses Acceptable for Credit in Arts,

Each student in the Faculty of Arts will be placed on academic suspension regardless if there has been evidence of improved performance if they have:

-more than 30 credit hours of "F" grades, or

-more than 42 credit hours of a combination of "F" and "D" grades.

Following the one year suspension, the student may return upon application to the Faculty of Arts General Office by selecting one of the following irreversible options:

- (a) to continue with no possibility of further "F" or "D" grades. Any further "F" or "D" grades will result in academic suspension for two years. (Following the two year suspension, the student may apply to the Faculty of Arts General Office to return to start afresh.)



Or

(b) start afresh, with their previous work not counting towards satisfying degree requirements.

(In either case this does not mean that the previous coursework will be removed from the student history or transcript.)

### 5.11 Dean's Honour List and Graduating with Distinction or First Class Honours, Dean's Honour List

To qualify for this list a student must be registered in one of the four degree programs offered by the Faculty of Arts and complete at least 9 credit hours offered by the University of Manitoba during a term and attain a minimum term grade point average of 3.55. The notation "Dean's Honour List" will be included on the student's transcript specific to that term.

#### With Distinction

Students graduating with a B.A. General or a B.A. Integrated Studies Degree as a first degree will have their degree granted "With Distinction" if they have a minimum degree grade point average of 3.80 on all coursework taken at the University of Manitoba and provided a minimum of 60 credit hours of acceptable coursework is completed at the University of Manitoba. (Students seeking a second degree will be eligible for this recognition provided they complete a minimum of 60 credit hours of acceptable coursework at the University of Manitoba following admission to their second degree program.)

Students graduating with a B.A. Advanced Degree as a first degree will have their degree granted "With Distinction" if they have a minimum degree grade point average of 3.80 on all coursework taken at the University of Manitoba and provided a minimum of 90 credit hours of acceptable coursework is completed at the University of Manitoba. (Students seeking a second degree will be eligible for this recognition provided they complete a minimum of 90 credit hours of acceptable coursework at the University of Manitoba following admission to their second degree program.)

This distinction will be noted on the parchment and on the student's transcript.

#### First Class Honours

Students graduating with a B.A. Honours Degree will have their degree granted with "First Class Honours" if they have a minimum degree grade point average of 3.80 on all acceptable coursework completed at the University of Manitoba and have met the following residency requirements:

- Students must have completed a minimum of 78 credit hours of acceptable coursework at the University of Manitoba in a 108 credit hour Honours program;

- Students must have completed a minimum of 84 credit hours of acceptable coursework at the University of Manitoba in a 114 credit hour Honours program;

- Students must have completed a minimum of 90 credit hours of acceptable coursework at the University of Manitoba in a 120 credit hour Honours program.

The notation "First Class Honours" will appear on both the parchment and the student's transcript.

### 5.12 University Gold Medal and Program Medals, Gold Medal

The Faculty of Arts will award the University Gold Medal to the student graduating with an Arts degree who:

- 1) has the highest grade point average of all graduating students (with a minimum of 3.85) on all courses creditable in Arts attempted at the University of Manitoba over the last two Fall/Winter terms prior to graduation (with each Fall/Winter consisting of a minimum 24 hours of credit completed at the University of Manitoba) including any courses taken in the Summer Session between the last two Fall/Winter terms and

- 2) has a minimum grade point average of 3.85 which is determined on the basis of all courses creditable in Arts attempted in completing the degree, including courses approved on transfer from other faculties/schools at the University of Manitoba.

Students who have up to 30 hours of external transfer credit (including failed courses) would be eligible providing they attain the minimum grade point average of 3.85 on all courses completed at the University of Manitoba which are acceptable for credit in Arts.

The Gold Medal winner is ineligible for Faculty of Arts program medals.

For specific details on the tie-breaking mechanism, contact the Faculty of Arts General Office.

#### Program Medals

The Faculty of Arts will award a Program Medal to the student graduating in each of the General, Integrated Studies, Advanced and Honours Degree programs who:

- 1) has the highest grade point average of all graduating students (with a minimum of 3.75) on all courses creditable in Arts attempted at the University of Manitoba over the last two Fall/Winter terms prior to graduation (with each session consisting of a minimum of 24 hours of credit completed at



the University of Manitoba) including any courses taken in the Summer Session between the last two Fall/Winter terms and

2) has a minimum grade point average of 3.75 which is determined on the basis of all courses creditable in Arts attempted in completing the degree, including courses approved on transfer from other faculties/schools at the University of Manitoba.

Students who have up to 30 hours of external transfer credit (including failed courses) are eligible providing they attain the minimum grade point average of 3.75 on courses completed at the University of Manitoba which are acceptable for credit in Arts.

The Gold Medal winner is ineligible for Faculty of Arts Program Medals.

For specific details on the tie-breaking mechanism, contact the Faculty of Arts General Office.

### 5.13 Evaluation of Undergraduate Student Coursework,

A copy of the Faculty of Arts *Regulations for the Academic Evaluation of Student Coursework* is available to students for perusal in the Faculty of Arts General Office or website. This booklet includes regulations concerning the method of student evaluation, final examinations and/or term tests, final grades, etc. It should in particular be noted that there are no Supplemental Examinations in the Faculty of Arts. For information on Incompletes, Deferred Examinations, Debarment, Academic Dishonesty, etc., see the chapter General Academic Regulations and Requirements in this *Calendar*.

### 5.14 Seeking a B.A. as a Second Degree,

Once a Bachelor of Arts degree has been awarded by the University of Manitoba Senate, it cannot be revoked or "turned in" towards another degree.

Students who have completed an undergraduate degree may apply and be admitted to the Faculty of Arts seeking a second undergraduate degree. Students who hold a first degree from the Faculty of Arts may not apply for the B.A. Integrated Studies Degree Program as a second degree.

Effective the 2002-2003 Regular Session and thereafter, students who have graduated with a first undergraduate degree from the University of Manitoba will be allowed to transfer up to 60 credit hours of coursework from their first degree toward a second degree program in the Faculty of Arts. Courses taken in a qualifying program will be considered part of the first degree. Courses extra to the first degree, excluding courses taken in a qualifying program or another awarded degree, diploma or certificate, may be transferred in addition to the 60 credit hours.

Students with first degrees awarded by external institutions will be eligible for up to 60 credit hours of transfer credit providing the degree was award-ed and the courses were

taken within the 10 year period prior to admission and registration in the Faculty of Arts (see Section 5.2.2).

Once admitted students must satisfy all relevant undergraduate degree requirements except for the Written English and Mathematics requirements.

Students may not be admitted to the Faculty of Arts or complete a Bachelor of Arts Degree while concurrently pursuing a degree in another Faculty or School.

No transfer credit will be awarded to students seeking a third, fourth, etc., degree.

Students cannot obtain a second degree in the same discipline at the same or lower level as any of their previously awarded degree(s).

### 5.15 Application to Graduate with a B.A. Degree,

In order to officially receive a degree in any of the four programs leading to a B.A., students must indicate their intention to graduate by the relevant deadline date listed below. This process applies to students in each of the following three categories.

*Category 1:* Those students currently registered in the Faculty of Arts in either the B.A. General Degree, B.A. Integrated Studies Degree or the B.A. Advanced Degree Program must indicate their intention to graduate using Aurora Student.

Those students currently registered in the Faculty of Arts in the B.A. Honours Degree program must indicate their intention to graduate at the point of registration for their last set of courses when they complete the Registration Worksheet.

*Category 2:* Those students currently registered in the Faculty of Arts in either the B.A. Advanced or a B.A. Honours Degree program who decide to revert to the B.A. General Degree Program in order to graduate, must submit a request in writing to graduate to the General Office, Faculty of Arts. For graduation in May, the request must be received by April 30. For graduation in October, the request must be received by September 30. For graduation in February, the request must be received by January 30.

*Category 3:* Those students previously admitted to and registered in one of the respective degree programs in the Faculty of Arts and who have completed **all** of the requirements for the degree while registered in the Faculty of Arts, but who are currently registered in another Faculty or School at the University of Manitoba (excluding Extended Education) may submit a request in writing to graduate to the Faculty of Arts General Office.

### Deadline Dates to declare expected Graduation Date by Aurora Student:



May Graduation: end of registration revision period for Winter Term

October Graduation: August 1

February Graduation: end of registration revision period for Fall Term

## SECTION 6: Student Responsibilities

### 6.1.1 A Community of Scholars

The Faculty of Arts at the University of Manitoba defines itself as a community of scholars, all citizens of which must commit themselves to the advancement of learning, the dissemination of knowledge, and the well-being of all its members. Essential to these goals is each individual's commitment to the following values:

The affirmation of the dignity, worth, and equality of all citizens in the community;

The importance of reasoned debate and inquiry in all academic pursuits;

The practise of ethical conduct and personal integrity in all aspects of academic life.

Students who enrol in the Faculty of Arts voluntarily choose to join this community of scholars, and in doing so they accept the responsibilities as well as the benefits of living within it.

The Faculty of Arts offers its students remarkable opportunities for the acquisition of knowledge, the development of skills, and the free exchange of ideas that will shape their future lives. The scholarly community also provides a forum for extra-curricular activities, personal growth and social relationships that are equally important to one's sense of fulfilment. This should be an exciting process of discovering new goals, new points of view, and, indeed, a new and better sense of one's ideals and potential. But it is also a process of coming to recognize the value and special nature of the academic community itself.

The dynamic freedom of student life in the Faculty of Arts carries a special obligation that each individual act in such a way as to promote the well-being of other members — to accept willingly the categorical imperative of behaving in such a way that, if everyone else did the same, the good of all would prevail. This is a matter of accepting the differences of others, respecting the rights of others, and not abusing the resources that the faculty and the university put at your disposal. It is also a matter of acting honourably in all personal and academic relationships, and not tolerating through diffidence or neglect any violations of such obligations on the part of others. Our common commitment as citizens of the scholarly community will then work to enhance every individual member's experience and likelihood of success. Only with such a commitment from

everyone can the Faculty of Arts fulfil its mission at the core of a public institution charged with educating the leaders of tomorrow's society. And only with such a commitment can we make wise use of the public funds for which we are accountable.

### 6.1.2 Rights and Responsibilities

As a student in the Faculty of Arts you are entitled to the use of all appropriate resources (human and other) for the successful completion of your studies. But you are also responsible for the use of those resources in a manner that is honest, fair and equitable. For example, when you enrol in a course you implicitly accept the terms of a contract whereby the professor is committed to teaching to the best of his/her ability, while you and the other students are committed to learning to the best of yours. Repeated absences, or the neglect of reading or writing assignments, are not just matters of individual concern; because they undermine the effectiveness of discussion for others as well, they are a failure to honour the academic and social contract that is implicitly a part of your membership in this community. Similarly, borrowing a book from the library is a direct commitment to honour the rules and regulations governing the circulation of such material. To damage a library book by writing in it, highlighting, or worse, is not just an act of individual vandalism; it is the wilful partial destruction of a resource that other students (and even other generations of students) have the right and the need to consult. It is to forget, in other words, that public property is not no one's property; it is everyone's property.

Similar obligations to ethical conduct are an inherent part of all the academic work you do as requirements of your program. Participation in the free exchange of ideas, upon which the scholarly community depends, obligates all members of that community to complete honesty and to adequate documentation of their intellectual debts. Plagiarism, the representing of someone else's words or ideas as your own, or any other form of academic dishonesty such as cheating, is a betrayal not just of individual honour, but of the whole basis of civilized discourse upon which all other members of the community depend.

The Manitoba Code of Human Rights guarantees everyone the right to be free of discrimination on the basis of gender or sexual orientation, age, ancestry, religion, family status, physical or mental handicap, and political beliefs. The rights and responsibilities of students thus go well beyond the classroom, library, or computer facility. Every student in the Faculty of Arts is at all times entitled to pursue his/her activities and program of study free of any social discrimination, harassment, exploitation or abuse of power on the part of others, staff or students. Consequently, every student also has a reciprocal obligation to act in a similarly ethical fashion toward all other members of the community. In order that we all be fully empowered to take advantage of the pursuit of knowledge, the development of skills and the special opportunities for personal growth offered by the faculty, there must be on everyone's part a commitment to avoid irresponsible behaviour that damages the academic potential or self-esteem of others.

### 6.1.3 Rules and Regulations



It is the intention of the Faculty of Arts to discourage any conduct that is detrimental to the welfare of the scholarly community and its individual members. In this *Undergraduate Calendar* there are many regulations governing the expectations and standards of academic work in the faculty, and there are mechanisms of appeal at the department and faculty level for those who feel that the application of these regulations has been unfair or unjust. There are also rules and regulations governing the use of university resources and facilities, and others governing the social conduct of mem-bers of the community — for example, a policy on sexual harassment and a policy banning weapons from campus. Any violations of these rules and regulations should be reported to the appropriate administrative agency or authority (e.g., the director of Libraries, the sexual harassment investigation officer or the Security Services). It must be remembered, too, that all federal, provincial and municipal laws (regarding, for example, violence, alco-hol, and drugs) are enforced on campus.

There are, however, some kinds of behaviour that fall between these academic and legal concerns, which are nevertheless inappropriate in the context of an academic community. Any disruptive action or physically or verbally aggressive behaviour that serves to threaten or intimidate another member of the community (staff or student) should be immediately reported to the relevant head of department or dean. Persons who are found to have violated the rights of other individuals, or to have subverted the welfare of the academic community, will face disciplinary action, which may include expulsion from the faculty. It is important to recognize, though, that such discipline is always less effective than a common commitment to respect the rights of others.

#### 6.1.4 Conclusion

The foregoing statement of responsibilities applies to all student members of the Faculty of Arts. Faculty members and support staff are governed by a number of university, Senate and faculty policies that set out similar standards of ethical and professional conduct. This code is meant to give the students in the Faculty of Arts a sense of the relation that exists between their rights and their responsibilities and how these rights and responsibilities in turn sustain the welfare of the whole academic community.

#### 6.2 General Responsibilities,

Every effort is made to ensure that students in the Faculty of Arts have access to sound information and individual advice and guidance. Within this context and within the framework of faculty and department requirements indicated above, students are personally responsible for course selection and

conforming to regulations regarding continuation in, and graduating from, the four undergraduate programs.

Students should take special care to ensure:

That each time they register that the courses they choose meet all requirements for graduation;

- That the courses they choose meet prerequisite conditions;
- That the courses they choose are not exclusions of, or the equivalent of, other courses already taken;
- The accuracy of their registration records, including all changes; and
- That they have noted and are following all deadlines and procedures published in the *Calendar* and elsewhere.

A copy of the Policy on Disclosure and Security of Student Academic Records is available for students to read in the Faculty of Arts General Office.

### SECTION 7: Special Circumstances and Appeals of Matters Regarding Academic Regulations

Students should promptly consult the Faculty of Arts General Office when special circumstances warrant consideration of exceptions to regulations. In addition, the Academic Regulations Appeals Committee meets through-out the year to consider appeals from students who request special consid-eration with respect to rules and regulations governing their programs of study and qualifications for graduation.

Students who intend to appeal matters concerning regulations or decisions of the Faculty which may affect their registration must arrange to submit a written appeal including all pertinent documentation to the secretary nor-mally within three months following the term in which the course was tak-en or from the date of the academic decision. Appeals will not be considered beyond three years after the end of the course or from the date of the academic decision:

Deadline to Submit Appeal	ARAC Meeting Date
June 30	Third week of August
October 1	Third week of November
December 1	Third week of February
April 1	Third or fourth week of May



Deadlines falling on a Saturday or Sunday will be observed on the preceding Friday.

Meeting dates are subject to change by the chair.

Appeals should be addressed to: The Secretary of the Academic Regulations Appeals Committee, c/o Faculty of Arts General Office. Special forms are available in the General Office.

## SECTION 8: Departments in, and Programs and Courses Offered by, the Faculty of Arts

### 8.1 Department of Anthropology

**Acting Head:** Greg Monks  
**General Office:** 435 Fletcher Argue Building  
**Telephone:** 204 474 9361  
**E-mail:** [um-anthro@cc.umanitoba.ca](mailto:um-anthro@cc.umanitoba.ca)  
**Website:** [umanitoba.ca/anthropology/](http://umanitoba.ca/anthropology/)

#### 8.1.1 Program Information

Anthropology is a science that examines human issues from both cultural and biological perspectives. The most fundamental concern of this discipline is the survival of humanity and the conditions of continuity and change for all human life. The department offers courses in socio-cultural anthropology or ethnology, archaeology, language and culture, and biological or physical anthropology. While academic staff of the department have research interests that range from northern climates to the tropics and from Asia to the Americas, the department is also involved in research that sheds light on Manitoba and its people.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### 8.1.2 Anthropology

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR<sup>1</sup> TOTAL: 30 CREDIT HOURS</b>			
ANTH 1210 and ANTH 1220 (or ANTH 1520)	<ul style="list-style-type: none"> <li>• ANTH 2000</li> <li>• 3 credit hours of 2000 level Group B courses</li> <li>• 6 credit hours in Group D or Group C</li> </ul>		

#### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in both ANTH 1210 and ANTH 1220 (or ANTH 1520). For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

#### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in both ANTH 1210 and ANTH 1220 (or ANTH 1520).

#### Introductory Courses

The general introductory courses (ANTH 1210, and ANTH 1220 or ANTH 1520) present the major ideas and findings of Anthropology. It is equally appropriate for those planning to take further courses in this field and for students from other departments or faculties.

#### Specializations

Anthropology courses are arranged into groups or areas of study as follows:

- A: Introductory Anthropology
- B: Cultural Anthropology
- C: Physical Anthropology
- D: Archaeology
- E: Applied Anthropology



	<p>courses</p> <ul style="list-style-type: none"> <li>• 12 credit hours in additional Anthropology</li> </ul>	
<b>ADVANCED MAJOR<sup>1</sup> TOTAL: 60 CREDIT HOURS</b>		
<p>ANTH 1210 and ANTH 1220 (or ANTH 1520)</p>	<ul style="list-style-type: none"> <li>• ANTH 2000</li> <li>• 3 credit hours of 2000 level Group B courses</li> </ul>	<ul style="list-style-type: none"> <li>• ANTH 3470</li> <li>• one of ANTH 2890, ANTH 3730, ANTH 3930, ANTH 3950, ANTH 3980, ANTH 3990</li> </ul>
	<p>Required in years two and three are:</p> <ul style="list-style-type: none"> <li>• 6 additional credit hours from each of group B, C, and D courses</li> <li>• an additional 12 credit hours in Anthropology preferably including courses from Group E and ANTH 2370. A minimum of 9 credit hours (in addition to ANTH 3470) must be at the 3000 level. Students considering graduate studies should include a quantitative methods course among their non-Anthropology electives (e.g., Sociology SOC 2290, Statistics STAT 1000 and STAT 2000).</li> </ul>	<ul style="list-style-type: none"> <li>• ANTH 4850</li> <li>• 9 credit hours in Anthropology (of these a minimum of 3 credit hours must be at the 4000 level). No more than 6 credit hours may be taken from ANTH 4830 and ANTH 4840</li> </ul>
<b>MINOR (CONCENTRATION)<sup>1</sup> TOTAL: 18 CREDIT HOURS</b>		
<p>ANTH 1210 and ANTH 1220 (or ANTH 1520)</p>	<p>An additional 12 credit hours in Anthropology. ANTH 2000 and 3 credit hours of 2000 level Group B courses are recommended for students taking a Minor to gain an academic grounding fundamental to many subsequent</p>	



Anthropology courses.

**NOTE:**

<sup>1</sup> Courses NATV 2070 and NATV 2080 offered by the Department of Native Studies count for credit (Category B) towards a General Major and Advanced Major in Anthropology.

### 8.1.3 Anthropology Course Descriptions- 1000 Level

**ANTH 1210** Human Origins and Antiquity (A) Cr.Hrs.3 (Formerly 076.121) An introduction to physical anthropology and archaeology. Topics include: biological evolution, evolution and comparative behaviour of primates, fossil evidence for human evolution, and the emergence of human culture. Students may not hold credit for ANTH 1210 (076.121) and any of: ANTH 1211 (076.121) or the former 076.120.

**ANTH 1220** Cultural Anthropology (A) Cr.Hrs.3 (Formerly 076.122) The comparative study of human societies and cultures, including language, economic and political organization, family and kinship, ritual and belief systems, cultural stability and change. Students may not hold credit for ANTH 1220 (076.122) and any of: ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120.

**ANTH 1520** Critical Cultural Anthropology (A) Cr.Hrs.3 (Formerly 076.152) An introduction to social cultural anthropology that critically examines production and exchange systems, age, gender, kinship and other social distinctions, belief systems, politics, and interactions between cultural systems. Learning and performance assessment is based upon supervised reading and essay writing. Students may not hold credit for ANTH 1520 (076.152) and any of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or the former 076.120.

### 8.1.3 Anthropology Course Descriptions- 2000 Level

**ANTH 2000** Culture, Society, and Power (B) Cr.Hrs.3 An advanced introduction to cultural anthropology that focuses on anthropological approaches to the cross-cultural organization, dynamics, and tensions of social relationships at individual, group, and societal levels. Students may not hold credit for ANTH 2000 and any of: ANTH 2001 or the former ANTH 2390 (076.239) or the former ANTH 2391 (076.239). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2020** Relatedness in a Globalizing World (B) Cr.Hrs.3 Anthropological approaches to diverse practices of human relatedness across cultures and over time, including 21st century reconfigurations or marriage, family, reproduction and kinship.

**ANTH 2040** Native North America: A Sociocultural Survey (B) Cr.Hrs.3 (Formerly 076.204) An ethnographic survey of the cultures of Native North American peoples. Students may not hold credit for both ANTH 2040 (076.204) and ANTH 2041 (076.204). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2060** European Archaeology (D) Cr.Hrs.3 (Formerly 076.206) This course will survey the archaeological record of Europe from the earliest human occupation through the rise of early cities and complex societies. Case studies will be used to examine the social, political, economic, and technological adaptations of early human societies in the region.

**ANTH 2100** Introduction to Archaeology (D) Cr.Hrs.3 (Formerly 076.210) A general introduction to the principles of archaeology and the materials, analyses, and interpretations encountered in archaeological study. Students may not hold credit for both ANTH 2100 (076.210) and the former 076.290. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 2230** Anthropology of Travel and Tourism (B) Cr.Hrs.3 (Formerly 076.223) Anthropological approaches to the study of cultural practices and phenomena of travel and tourism. Travel is examined in various social, historical, and cultural contexts as a way of seeing and experiencing the world. Emphasis is placed on the intersection of culture, colonialism, capitalism, and globalization, with practices of travel, including mass tourism. Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2240** Plagues and People (C) Cr.Hrs.3 Examines selected plagues in evolutionary, ecological, and epidemiological context, and considers the complex biological, social, and economic repercussions for human populations. Foci include past, present, and emerging infectious disease epidemics.

**ANTH 2300** Anthropology of Childhood (B) Cr.Hrs.3 Anthropological approaches to the study of children and childhood. Childhood is examined as a social and historical construction, and children are analyzed as active contributors to their social worlds. Cross-cultural ethnographic material relating to children and youth is critically read and discussed. Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221



(076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2350** Ethnology of Sub-Saharan Africa (B) Cr.Hrs.3 (Formerly 076.235) A survey of culture and society in traditional and contemporary Africa. Students may not hold credit for both ANTH 2350 (076.235) and the former ANTH 2351 (076.235). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or ANTH 2360 (076.236) or the former ANTH 2361 (076.236) or the former 076.120] or written consent of instructor.

**ANTH 2370** Language and Culture (B) Cr.Hrs.3 (Formerly 076.237) The investigation of the complex interaction of language and culture, including linguistic perspectives on prehistory, ethnosemantics, and sociocultural correlations of linguistic variation. Students may not hold credit for both ANTH 2370 (076.237) and ANTH 2011 (076.201). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2380** Art, Symbols, Cultures (B) Cr.Hrs.3 (Formerly 076.238) Studies of the social contexts and functions of human artistic and symbolic behaviour in cross-cultural perspective. Students may not hold credit for both ANTH 2380 (076.238) and ANTH 2381 (076.238). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2430** Ecology, Technology and Society (B) Cr.Hrs.3 (Formerly 076.243) Ecological analysis of the interplay of socio-political and technological processes in different types of societies. Focus upon the ecological side-effects and selected technologies, economic mechanisms and political institutions. Students may not hold credit for both ANTH 2430 (076.243) and ANTH 2500 (076.250). May not be used for Major or Minor in Anthropology.

**ANTH 2450** Ethnology of China (B) Cr.Hrs.3 (Formerly 076.245) Issues in the anthropological study of contemporary China will be introduced in comparative perspective. The emphasis will be on issues such as economic development, changing gender relations, population growth and migration, and the politics of culture. Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2470** Anthropology of Mass Communication (B) Cr.Hrs.3 (Formerly 076.247) This course focuses on media production and dissemination and on images of the world created by media. Media practices and products are addressed in relation to the formation of social relations and identities, the shaping of peoples' sense of time and space, and media's role in the construction of communities and in processes of socio-economic and cultural change. Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2500** Culture, Environment, and Technology (B) Cr.Hrs.3

(Formerly 076.250) Study of ecological systems, focusing on processes of adaptation in societies differing in organization and in views of technology. Demographic and technological changes are examined in relation to cultural, political and ideological factors. Students may not hold credit for both ANTH 2500 (076.250) and ANTH 2430 (076.243). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2510** Anthropology of Economic Systems (B) Cr.Hrs.3 (Formerly 076.251) A comparative study of factors bearing upon production, exchange, and consumption of goods, practices and ideas in varying social contexts. The course also examines the articulation of economic systems in the global political economy. Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2530** Anthropology of Political Systems (B) Cr.Hrs.3 (Formerly 076.253) Analysis of political institutions and their changing nature in diverse societies and forms of society, with attention to authority, leadership, decision-making, power and its disguises, and forms of resistance. Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2550** Culture and the Individual (B) Cr.Hrs.3 (Formerly 076.255) The study of the interrelations between life-cycle, psychological functioning and malfunctioning, and social and cultural institutions. Emphasis is placed on enculturation and life-cycle rituals. Students may not hold credit for both ANTH 2550 (076.255) and ANTH 2551 (076.255). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2560** Anthropology of Illness (B) Cr.Hrs.3 (Formerly 076.256) Comparative study of cultural factors involved in health/illness: concepts of disease and curing practices. Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2570** Urban Anthropology (B) Cr.Hrs.3 (Formerly 076.257) Comparison of the processes of urbanization and various forms of urbanism, with attention to archaeological evidence and the emergence of urbanism and urbanization in developing nations.

**ANTH 2600** Old World Prehistory (D) Cr.Hrs.3 (Formerly 076.260) A survey of the archaeological evidence and cultural interpretations of Old World cultures from the beginning of the Pleistocene to the development of agriculture. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 2610** Old World Civilizations (D) Cr.Hrs.3 (Formerly 076.261) Archaeological evidence and cultural interpretations of the origins of complex societies from the development of agriculture to the beginnings of written



history in the Old World. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 2620** New World Prehistory (D) Cr.Hrs.3  
(Formerly 076.262) Archaeological evidence and cultural interpretations of those New World cultures which did not develop civilizations, from the earliest inhabitants until the period of initial European contact. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 2630** New World Civilizations (D) Cr.Hrs.3  
(Formerly 076.263) Archaeological evidence and cultural interpretations of the growth and development of complex societies in the New World from the origins of agriculture to the period of initial European contact. Emphasis will be placed on the "high cultures" of Central and South America. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 2640** Manitoba Prehistory (D) Cr.Hrs.3  
(Formerly 076.264) Archaeological evidence and culture history of prehistoric populations which inhabited the various environmental zones of Manitoba. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 2690** Peoples and Cultures of Contemporary Latin America (B) Cr.Hrs.3  
(Formerly 076.269) An ethnographic survey of the cultural diversity of contemporary Latin America with selected case study examples drawn from Mexico and Central America, South America, and the Hispanic Caribbean. Case studies are selected to represent a variety of anthropological perspectives. Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 2820** Human Osteology (C) Cr.Hrs.3  
(Formerly 076.282) An examination of normal and pathological skeletal anatomy. Quantitative methods of analysis for archaeological and forensic applications. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 2860** Evolution and Human Diversity (C) Cr.Hrs.3  
(Formerly 076.286) An introduction to the interacting roles of heredity, culture and environment in human families and populations. Introduces the biological bases for variation within/between human populations. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 2880** Human Evolution (C) Cr.Hrs.3  
(Formerly 076.288) Intensive study of human organic evolution within hominid primates. Consideration of the relationships of socio-cultural adaptation to human evolution. Prerequisite: [a grade of "C" or better in one of: ANTH 1210

(076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 2890** Human Population Biology (C) Cr.Hrs.3  
(Formerly 076.289) Intensive study of the evolutionary implications of genetic variation within/between human populations in relationship to ecological and cultural variation. Prerequisite: [a grade of "C" or better in ANTH 2860 (076.286)] or written consent of instructor.

**ANTH 2910** Historical Archaeology (D) Cr.Hrs.3  
(Formerly 076.291) An archaeological survey of the early post-European period in North America. Case studies will emphasize selected regions, time periods, and topics that may include: the western Canadian fur trade; European colonialism in North America; international colonialism. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 2930** Archaeology of a Selected Area (D) Cr.Hrs.3  
(Formerly 076.293) Detailed examination of the archaeology of a geographical area that is of current interest to faculty and students. The areas will rotate annually and will include but not be limited to the Caribbean, Europe, the Northwest Coast, Canada, the Arctic and the sub-Arctic. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.1.3 Anthropology Course Descriptions- 3000 Level

**ANTH 3200** Anthropology of Food (B) Cr.Hrs.3  
Considers the diversity of ways that anthropologists have used food as a productive entry point for understanding culture, society, and human ecology. The course will survey highpoints in the history of the anthropology of food and address current topics such as food security and food movements. Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 3320** Women in Cross-Cultural Perspective (B) Cr.Hrs.3  
(Formerly 076.332) Critical perspectives on the role of women cross-culturally, with ethnographic reference to non-Western societies and cultures. Students may not hold credit for both ANTH 3320 (076.332) and ANTH 3321 (076.332). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 3330** Sex and Sexualities (B) Cr.Hrs.3  
Comparative approaches to the study of human sexuality and the diversity of sexual expression and identification from a feminist and cross-cultural ethnographic perspective. Sex and sexualities are examined as social and cultural constructions, experiences, discourses, identities, and practices located in specific local contexts and shaped by wider social processes including colonialism and globalization. This course is also offered as WOMN 3330. Students may not hold credit for ANTH 3330 and any of:



WOMN 3330 or the former ANTH 3350 or WOMN 3500 (156.350) with the topic "Anthropology of Sex and Sexualities." Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Anthropology or Women's and Gender Studies courses] or written permission of instructor.

**ANTH 3380** Anthropology and Contemporary Social Issues (B) Cr.Hrs.3  
(Formerly 076.338) Anthropological perspectives on poverty, social accountability, colonialism, racism, education, ecological degradation and violence. Students may not hold credit for both ANTH 3380 (076.338) and ANTH 3381 (076.338). Prerequisite: [a grade of "C" or better in ANTH 2390 (076.239) or ANTH 2391 (076.239)] or written consent of instructor.

**ANTH 3470** History of Anthropology (B) Cr.Hrs.3  
(Formerly 076.347) A temporal survey of the development of major paradigms and theoretical movements in anthropological thought and method. Students may not hold credit for both ANTH 3470 (076.347) and ANTH 3471 (076.347). Prerequisite: [a grade of "C" or better in ANTH 2390 (076.239) or ANTH 2391 (076.239)] or written consent of instructor.

**ANTH 3500** Peoples of the Arctic (B) Cr.Hrs.3  
(Formerly 076.350) Ethnographic survey of the aboriginal peoples of the circumpolar regions of Asia, North America, and Greenland. Attention will be given to the aboriginal and post-contact situations among such peoples. Students may not hold credit for both ANTH 3500 (076.350) and ANTH 3501 (076.350). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 3550** Canadian Subcultures (B) Cr.Hrs.3  
(Formerly 076.355) An anthropological study of dimensions of community, ethnicity, and social class in Canadian society. Students may not hold credit for both ANTH 3550 (076.355) and ANTH 3551 (076.355).

**ANTH 3600** Archaeological Method and Theory (D) Cr.Hrs.3  
(Formerly 076.360) The historical development and current application of theoretical and methodological frameworks for archaeological interpretation. Prerequisite: [a grade of "C" or better in ANTH 2100 (076.210) or the former 076.290] or written consent of instructor.

**ANTH 3720** Demography of Past Populations (C) Cr.Hrs.3  
(Formerly 076.372) This course provides students with a basic understanding of demographic methods and techniques applied in analysis of long term changes in the demographic patterns of anthropological populations. Prerequisite: [a grade of "C" or better in one of: ANTH 1210 (076.121) or ANTH 1211 (076.121) or the former 076.120] or written consent of instructor.

**ANTH 3730** Forensic Anthropology (C) Cr.Hrs.3  
(Formerly 076.373) This course provides the theory, methods, and techniques for forensic identification of human skeletal remains, including estimation of sex, age-at-death, stature, population affinities and features of personal biology. The laboratory component of this course, where students work with actual human skeletal remains, is a major

component. Prerequisite: a grade of "C" or better in ANTH 2820 (076.282).

**ANTH 3740** Human Growth and Variation (C) Cr.Hrs.3  
(Formerly 076.374) An examination of variation in human body form and composition in the context of normal growth and development viewed in an evolutionary perspective. Prerequisite: [a grade of "C" or better in ANTH 2860 (076.286)] or written consent of instructor.

**ANTH 3750** Anthropological Perspectives on Globalization and the World-System (B) Cr.Hrs.3  
(Formerly 076.375) An anthropological perspective on the modern world-system and the expansion of capitalism into peripheral areas of the world; the transformation of indigenous societies and cultures; the rise of ethnic conflict, protest and resistance; and a comparative examination of selected global and transnational processes. Students may not hold credit for both ANTH 3750 (076.375) and ANTH 3751 (076.375). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or ANTH 2000 or ANTH 2001 or the former ANTH 2390 (076.239) or the former ANTH 2391 (076.239) or the former 076.120] or written consent of instructor.

**ANTH 3810** Anthropology of Belief Systems (B) Cr.Hrs.3  
(Formerly 076.381) A comparative study of belief systems, rituals, and ceremonies in non-Western and Western societies and cultures. Students may not hold for credit both ANTH 3810 (076.381) and ANTH 3811 (076.381). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

**ANTH 3910** Archaeological Field Training (D,E) Cr.Hrs.6  
(Formerly 076.391) Theory and practical field experience in the investigation of archaeological sites from the formulation of research designs through data analysis in the field. Offered in alternate summers. See Anthropology Department for details. Prerequisite: [a grade of "C" or better in ANTH 2100 (076.210) or the former 076.290] and written consent of instructor.

**ANTH 3930** Ethnographic Research Methods (B) Cr.Hrs.3  
A survey of ethnographic research methods with an emphasis on qualitative approaches, including both field and analytical techniques. Students may not hold credit for both ANTH 3930 and the former ANTH 3390 (076.339).

**ANTH 3950** Artifact Analysis (D) Cr.Hrs.3  
(Formerly 076.395) Analytic and interpretive methods for treating archaeologically recovered materials such as lithics, ceramics and other artifacts are addressed through lectures, demonstrations and other laboratory exercises. Prerequisite: [a grade of "C" or better in ANTH 2100 (076.210) or the former 076.290] or written consent of instructor.

**ANTH 3960** Cultural Resource Management (D,E) Cr.Hrs.3  
(Formerly 076.396) A survey of the concepts, methods, and techniques used in the management of cultural, especially archaeological, heritage resources. The roles of public agencies, private contractors, and heritage legislation in Canadian CRM are reviewed. Prerequisite: [a grade of "C" or better in ANTH 2100 (076.210) or the former 076.290] or written consent of instructor.



**ANTH 3970** Ethnography of a Selected Region (B) Cr.Hrs.3 (Formerly 076.397) An ethnographic survey of the culture(s) of a selected geographical area currently of interest to faculty and students. The areas to be studied may differ from year to year. Students may not hold for credit both ANTH 3970 (076.397) and ANTH 3971 (076.397). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**ANTH 3980** Botanical Analysis in Archaeology (D) Cr.Hrs.3 (Formerly 076.398) Analytic and interpretive methods for treating archaeologically recovered plant remains and soils are addressed through lectures, demonstrations, and laboratory exercises. Prerequisite: [a grade of "C" or better in ANTH 2100 (076.210) or the former 076.290] or written consent of instructor.

**ANTH 3990** Faunal Analysis in Archaeology (D) Cr.Hrs.3 (Formerly 076.399) Analytic and interpretive methods of treating archaeologically recovered faunal remains are addressed through lectures, demonstrations, and laboratory exercises. Prerequisite: [a grade of "C" or better in ANTH 2100 (076.210) or the former 076.290] or written consent of instructor.

### 8.1.3 Anthropology Course Descriptions- 4000 Level

**ANTH 4760** Practicum in Archaeology (D) Cr.Hrs.3 (Formerly 076.476) This course is designed to provide advanced undergraduate students in archaeology with individualized practical experience in different aspects of archaeology by working with professional archaeologists. Prerequisite: [a grade of "C" or better in ANTH 2100 (076.210) or the former 076.290] or written consent of instructor.

**ANTH 4780** Selected Topics in Cultural Anthropology (B) Cr.Hrs.3 (Formerly 076.478) Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.

**ANTH 4790** Selected Topics in Archaeology (D,E) Cr.Hrs.3 (Formerly 076.479) Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.

**ANTH 4800** Seminar in Applied Anthropology (B,E) Cr.Hrs.6 (Formerly 076.480) A review of the history of applied anthropology and investigation of major case studies, research methodologies, intervention strategies, and substantive areas of application. Prerequisite: written consent of instructor or department head.

**ANTH 4830** Advanced Reading and Research (B,C,D) Cr.Hrs.3 (Formerly 076.483) Prerequisite: written consent of instructor and department head. As the course content will vary from year to year, students may take this course more than once

for credit.

**ANTH 4840** Advanced Independent Work (B,C,D) Cr.Hrs.6 (Formerly 076.484) Prerequisite: written consent of instructor and department head. As the course content will vary from year to year, students may take this course more than once for credit.

**ANTH 4850** Advanced Seminar in Anthropological Theory (B) Cr.Hrs.3 (Formerly 076.485) An analysis of the process of theory formation in the social sciences in general and in cultural (social) anthropology in particular. The theoretical content of various contemporary "schools" in anthropology is critically analyzed. Prerequisite: [a grade of "C" or better in ANTH 3470 (076.347) or ANTH 3471 (076.347)] and written consent of instructor or department head.

**ANTH 4860** Selected Topics in Biological Anthropology (C,E) Cr.Hrs.3 (Formerly 076.486) Topics in biological anthropology which will vary depending on the needs of students and the interest of the instructor. Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.

## 8.2 Asian Studies Centre

**Director:** William Lee

**Centre Office:** 357 University College

**Telephone:** 204 474 7047

**E-mail:** [asian\\_studies@umanitoba.ca](mailto:asian_studies@umanitoba.ca)

**Website:** [umanitoba.ca/asian\\_studies](http://umanitoba.ca/asian_studies)

### 8.2.1 Program Information,

Asia is home to approximately 60 percent of the world's population. Asian nations have emerged as major economic powers while their populations are asserting their own cultural and historical identities. With this comes an expectation that Western nations will take an interest not only in the economic potential of the continent but also in its rich cultural heritage.

The Asian Studies Centre was established in 1990 to stimulate and organize teaching and research on Asia. Faculty attached to the centre offer instruction in the languages and culture of China, India and Japan. As well, specialists in other departments offer Asia-related courses that can be used for a Major or Minor in Asian Studies.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in both ASIA 1420 (HIST 1420) and ASIA 1430 (HIST 1430). For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.



A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in both ASIA 1420 (HIST 1420) and ASIA 1430 (HIST 1430).

**Minor (Concentration) Program**

**8.2.2 Asian Studies,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
ASIA 1420 (HIST 1420) and ASIA 1430 (HIST 1430)	<ul style="list-style-type: none"> <li>• 6 credit hours in one of the language courses numbered at the 1000 level from List A</li> <li>• 6 credit hours from ASIA 2080, ASIA 2620 or ASIA 2630</li> <li>• 6 credit hours in courses numbered at the 2000 level from List A</li> </ul>	6 credit hours from courses in List A numbered at the 3000 level and above (Students may substitute up to 6 credit hours in Asian language courses numbered at the 2000 level.)	
Students who wish to concentrate heavily on languages may take an Asian language course numbered at the 1000 level in University 1. Students with matriculation in an Asian language may do an Asian language course numbered at the 2000 level in Year 2 and are encouraged to take a language course numbered at the 3000 level language in Year 3.			
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
ASIA 1420 (HIST 1420) and ASIA 1430 (HIST 1430)	12 credit hours chosen from List A		

**List A Courses Acceptable for Asian Studies Credit**

Course No.	Credit Hours
<b>Faculty of Arts</b>	
<b>Anthropology</b>	
ANTH 2450 Ethnology of China	3
<b>Asian Studies Asian Languages</b>	
ASIA 1750 Introduction to Korean	6
ASIA 1760 Introduction to Chinese (Mandarin)	6
ASIA 1770 Introduction to Japanese	6
ASIA 1780 Basic Sanskrit	6
ASIA 1790 Basic Hindi-Urdu	6
ASIA 2340* Special Studies in Epic and Pauranic Sanskrit 1	3
ASIA 2350* Special Studies in Epic and Pauranic Sanskrit 2	3
ASIA 2360 Mandarin Comprehension	6
ASIA 2750 Intermediate Korean	6
ASIA 2760 Intermediate Chinese (Mandarin)	6
ASIA 2770 Intermediate Japanese	6
ASIA 2780 Intermediate Sanskrit	6
ASIA 2790 Intermediate Hindi-Urdu	6
ASIA 3660 Advanced Mandarin Comprehension	6
ASIA 3760 Advanced Chinese (Mandarin)	6
ASIA 3770 Advanced Japanese	6
ASIA 3790* Advanced Hindi-Urdu	6
ASIA 3792 Linguistic Analysis of Japanese	3
<b>Asian Studies Other Asian courses</b>	
ASIA 1420 Asian Civilizations to 1500 (Same as HIST 1420)	3
ASIA 1430 Asian Civilizations from 1500 (Same as HIST 1430)	3
ASIA 2070* South Asian Civilization	6
ASIA 2080 South Asian Civilization	3
ASIA 2570 History, Culture and Society in Chinese Film	3
ASIA 2580 Women in Chinese Film	3
ASIA 2600 Japanese Film	3



ASIA 2620	Japanese Civilization	3
ASIA 2630	Chinese Civilization	3
ASIA 2650	Premodern Chinese Literature in Translation	3
ASIA 2660	Modern Chinese Literature in Translation	6
ASIA 2670	Modern Japanese Literature in Translation	3
ASIA 3480	Selected Topics in Asian Studies 1	3
ASIA 3490	Selected Topics in Asian Studies 2	3
ASIA 3560	Themes and Genres in Asian Literature	3
ASIA 3600	Japanese Popular Culture	3
ASIA 3650*	Masterpieces of Asian Literature	6
150.141*	Asian Civilizations (Same as HIST 1410)	6
150.211*	East Asian Civilization	6
<b>History</b>		
HIST 1410*	Asian Civilizations (Same as the former 150.141)	6
HIST 1420	Asian Civilizations to 1500 (Same as ASIA 1420)	3
HIST 1430	Asian Civilizations from 1500 (Same as ASIA 1430)	3
HIST 2050	South Asia Since 1947	3
HIST 2130	Emergence of Modern South Asia: 1757-1947	3
HIST 2410	History of India	6
HIST 2650	Modern China and Japan	6
HIST 2654	History of the People's Republic of China, 1949-Present	3
HIST 3090	Studies in Asian History	3
HIST 3580	Topics in Recent World History 1 [Acceptable for credit only when the topic is Asia related]	3
HIST 3960*	China, 1911 to the Present	3
HIST 3980	Nationalism on the Indian Sub-Continent in the Twentieth Century	3
HIST 4070	Issues in Modern Asian History 1: Selected Topics (M,B)	3
HIST 4080	Issues in Modern Asian History 2: Selected Topics (M,B)	3
HIST 4200	Modern South Asia: Colonialism, Nationalism, and Modernization	3
HIST 4940*	Revolutionary China: A Century of Upheaval, 1870 to Present	6
<b>Political Studies</b>		
POLS 2020*	Asian Politics	6
<b>Religion</b>		
RLGN 1320	Introduction to World Religions	6
RLGN 1321	Introduction aux religion du monde	6
RLGN 2010	Introduction to Hinduism (B)	3
RLGN 2020	Introduction to Buddhism (B)	3
RLGN 2540*	Modern Movements in World Religions	6
RLGN 2570	Indian Religious Art and Architecture	3
RLGN 2700	Religions of China and Japan	6
RLGN 3150	Buddhism in East Asia (B)	3
RLGN 3160	Tibetan Religious Traditions (B)	3
RLGN 3210	Indian Philosophy (B)	3
RLGN 3220	Indian Religion and Society (C)	3
RLGN 3260	Indian Buddhism (B)	3
RLGN 3266	Readings in Buddhist Texts (B)	3
RLGN 3270	Guru and Disciple (B)	3
RLGN 3750	Topics in Indian Religious Art and Architecture	3
RLGN 4060	The Yoga Tradition (B)	3
RLGN 4100	Advanced Studies in Buddhism (B)	3
RLGN 4190	Advanced Studies in Hinduism (B)	3
020.266*	Religions of Indian Origin	6
020.374*	Studies in Asian Religions	6
020.441*	Masters of Spiritual Life	6
020.445*	Topics in Comparative Religion	6
<b>Sociology</b>		
SOC 3690*	Sociology of the Developing Societies	3
<b>School of Art</b>		
FAAH 2100*	Survey of Asian Art	3
FAAH 3230	Chinese Art and Architecture	3
FAAH 3240	Japanese Art and Architecture	3



FAAH 3590 Islamic Art and Architecture <b>Clayton H. Riddell Faculty of Environment, Earth, and Resources</b> <b>Geography</b>	3
GEOG 2490* Geography of Modern China	3
GEOG 3590 Geography of Developing Countries	6

\* Indicates course no longer offered.

ASIA 2790 (150.279) or the former ASIA 3790 (150.379).

### 8.2.3 Asian Studies Course Descriptions- 1000 Level

**ASIA 1420** Asian Civilizations to 1500 (B) Cr.Hrs.3  
(Formerly 150.142) A study of major themes in the history and culture of China and Japan, the Indian subcontinent and Southeast Asia from ancient times to around 1500. Also offered as History HIST 1420. May not hold credit with HIST 1420 (011.142).

**ASIA 1430** Asian Civilization from 1500 (B) Cr.Hrs.3  
(Formerly 150.143) A study of major themes in the history and culture of China and Japan, the Indian subcontinent and Southeast Asia in modern times. Also offered as History HIST 1430. May not hold credit with HIST 1430 (011.143).

**ASIA 1750** Introduction to Korean Cr.Hrs.6  
(Lab required) An introduction to spoken and written Korean for students with little or no previous knowledge of the language. Students will be taught basic pronunciation, vocabulary, and grammar, as well as the Hangul writing system. Students who have received all or a portion of their elementary or secondary education in the Korean language may not normally enrol.

**ASIA 1760** Introduction to Chinese (Mandarin) Cr.Hrs.6  
(Formerly 150.176) An introduction to modern vernacular (Mandarin) Chinese in spoken and written form. Grounding in pronunciation, basic grammar, vocabulary, and some written characters. Students who have received all or a portion of their elementary or secondary education in the Chinese language may not normally enrol. Not open to students who have previously obtained credit for ASIA 2360 (150.236) or ASIA 2760 (150.276) or ASIA 3760 (150.376).

**ASIA 1770** Introduction to Japanese Cr.Hrs.6  
(Formerly 150.177) An introduction for non-Japanese speakers to Hiragana, Katakana, and some Kanji. Students will be taught pronunciation, grammar, vocabulary, and about 250 written characters. Not open to students who previously obtained credit for ASIA 2770 (150.277) or ASIA 3770 (150.377). Students who have obtained Grade 12 Japanese in Canada or abroad must obtain written consent of instructor.

**ASIA 1780** Basic Sanskrit Cr.Hrs.6  
(Formerly 150.178) Students will first learn the Devanagari script then proceed to reading, writing, conversation, grammar and vocabulary. Not open to students who previously obtained credit for ASIA 2780 (150.278).

**ASIA 1790** Basic Hindi-Urdu Cr.Hrs.6  
(Formerly 150.179) Training in conversation, reading and writing of modern standard Hindi and some elements of Urdu. Students will learn to read and write the Devanagari script, and learn the basic grammar of the language. Not open to students who have previously obtained credit for

### 8.2.3 Asian Studies Course Descriptions- 2000 Level

**ASIA 2080** South Asian Civilization Cr.Hrs.3  
An interdisciplinary study of the Indian subcontinent from the ancient to the contemporary period, focusing on geographic, religious, historic, sociological, and political developments. Students may not hold credit for both ASIA 2080 and the former ASIA 2070 (150.207).

**ASIA 2360** Mandarin Comprehension Cr.Hrs.6  
(Formerly 150.236) For students with a reading and speaking knowledge of a Chinese dialect other than standard Mandarin. Students will learn the fundamentals of Mandarin phonetics and usage, then proceed to increase their fluency in directed conversation sessions using modern Chinese literature as the major subject of discussion. Not open to students who have previously obtained credit in ASIA 1760 (150.176) or ASIA 2760 (150.276) or ASIA 3760 (150.376). Prerequisite: written consent of instructor.

**ASIA 2570** History, Culture, and Society in Chinese Film Cr.Hrs.3  
(Formerly 150.257) This course will focus on the presentation of various aspects of twentieth century Chinese culture through the medium of film. Films will be selected largely from those recently produced in China, Taiwan, and Hong Kong, with some attention to recent North American movies by ethnic Chinese directors.

**ASIA 2580** Women in Chinese Film Cr.Hrs.3  
(Formerly 150.258) This course will focus on the cinematic presentation of women in Chinese films. Films will be selected largely from those produced recently in China, Taiwan, and Hong Kong, as well as in North America by ethnic Chinese directors. The intention is to review how the image of women as reflected in Chinese cinema has changed with time, place, and modern technology.

**ASIA 2600** Japanese Film Cr.Hrs.3  
A survey of cinematic art in Japan, with emphasis on the major directors and trends of the postwar period. Films to be studied will be drawn from the work of Mizoguchi, Ozu, Kurosawa, the "New Wave" directors of the 1960s, the comedies of Itami, and films of contemporary directors such as Kitano and Miyazaki.

**ASIA 2620** Japanese Civilization Cr.Hrs.3  
(Formerly 150.262) An interdisciplinary study of Japanese civilization from earliest times to the Meiji Restoration. All aspects of traditional Japanese culture will be examined, including geography, religion, philosophy, history, sociology, economics and politics. The nature of Japanese cultural identity will be taken as a unifying theme. Students may not hold credit for both ASIA 2620 (150.262) and the former



150.211.

**ASIA 2630** Chinese Civilization Cr.Hrs.3

(Formerly 150.263) An interdisciplinary study of Chinese civilization from earliest times to the Opium War. All aspects of traditional Chinese culture will be examined, including geography, religion, philosophy, history, sociology, economics, and politics. A central unifying theme will be the examination of Chinese cultural identity. Students may not hold credit for both ASIA 2630 (150.263) and the former 150.211.

**ASIA 2650** Premodern Chinese Literature in Translation Cr.Hrs.3

A study of pre-modern Chinese literature up to 1911. Includes writings in early history and philosophy, essays, poetry, short stories and novels. Lectures and texts in English.

**ASIA 2660** Modern Chinese Literature in Translation Cr.Hrs.6

(Formerly 150.266) A study of 20th century Chinese literature including prose, poetry and drama. Selected works of authors from the Peoples Republic of China, Taiwan, and overseas communities. Lectures and texts in English.

**ASIA 2670** Modern Japanese Literature in Translation Cr.Hrs.3

(Formerly 150.267) This course is intended as an introduction to Japanese Literature from the Meiji era (1868-1912) to the present day. Although some attention will be paid to poetry, the emphasis will be on short stories and the novel.

**ASIA 2750** Intermediate Korean Cr.Hrs.6

(Lab required) A continuation of the study of spoken and written Korean for students who have successfully completed ASIA 1750. Students will be taught advanced pronunciation, vocabulary, and grammar. Students who have received all or a portion of their elementary or secondary education in the Korean language may not normally enrol except by special permission of the instructor. Prerequisite: [a grade of "C" or better in ASIA 1750] or written consent of instructor.

**ASIA 2760** Intermediate Chinese (Mandarin) Cr.Hrs.6

(Formerly 150.276) Continues the introduction of basic vocabulary, grammatical structures, and written characters. Emphasis will be given to the development of aural/oral skills. Not open to students who have previously obtained credit for ASIA 2360 (150.236) or ASIA 3760 (150.376). Prerequisite: [a grade of "C" or better in ASIA 1760 (150.176)] or written consent of instructor.

**ASIA 2770** Intermediate Japanese Cr.Hrs.6

(Formerly 150.277) For students who have taken Japanese ASIA 1770 (150.177). Continues the introduction of basic vocabulary, grammatical structures and more written characters. Greater emphasis will be given to the development of aural/oral skills. Not open to students who have previously obtained credit in ASIA 3770 (150.377). Prerequisite: [a grade of "C" or better in ASIA 1770 (150.177)] or written consent of instructor.

**ASIA 2780** Intermediate Sanskrit Cr.Hrs.6

(Formerly 150.278) Advanced grammar, vocabulary, and syntax to enable the student to read epic and paوران

materials. Prerequisite: [a grade of "C" or better in ASIA 1780 (150.178)] or written consent of instructor.

**ASIA 2790** Intermediate Hindi-Urdu Cr.Hrs.6

(Formerly 150.279) Training in more complex conversation techniques, including narration, persuasion and argumentation. Further readings in Hindi; reading and writing in the Urdu script; reading of 20th-century Hindi and Urdu literature. Not open to students who have previously obtained credit for the former ASIA 3790 (150.379). Prerequisite: [a grade of "C" or better in ASIA 1790 (150.179)] or written consent of instructor.

**8.2.3 Asian Studies Course Descriptions-3000 Level****ASIA 3480** Selected Topics in Asian Studies 1 Cr.Hrs.3

(Formerly 150.348) An intensive study of specially selected authors or themes in Asian Studies. The particular subject will vary year to year. Prerequisite: written consent of Asian Studies coordinator. As the course content will vary from year to year, students may take this course more than once for credit.

**ASIA 3490** Selected Topics in Asian Studies 2 Cr.Hrs.3

(Formerly 150.349) An intensive study of specially selected authors or themes in Asian Studies. The particular subject will vary year to year. Prerequisite: written consent of Asian Studies coordinator. As the course content will vary from year to year, students may take this course more than once for credit.

**ASIA 3560** Themes and Genres in Asian Literature Cr.Hrs.3

A study of selected works of Asian literature organized around specific themes or genres in English translation. Content may vary from year to year, but will include literary works from two or more regions and two or more historical periods. Prerequisite: [a grade of "C" or better in ASIA 1420 (150.142) (HIST 1420 or the former 011.142) or ASIA 1430 (150.143) (HIST 1430 or the former 011.143)] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**ASIA 3600** Japanese Popular Culture Cr.Hrs.3

(Formerly 150.360) This course examines various examples of popular culture in contemporary Japan, including popular literature, film, television, popular music, and leisure activities. Attention will also be paid to popular culture theory and methods of analysis. Prerequisite: [a grade of "C" or better in ASIA 2620 (150.262)] or written consent of instructor.

**ASIA 3760** Advanced Chinese (Mandarin) Cr.Hrs.6

(Formerly 150.376) This course is for those who have taken Intermediate Chinese or who have obtained basic language skills in Mandarin Chinese elsewhere. A balanced approach to reading, writing, and aural/oral skills will be employed. Students will use advanced prepared texts and will also be introduced to selected examples of contemporary Chinese literature. Not open to students who previously obtained credit for ASIA 2360 (150.236) or ASIA 3660 (150.366). Prerequisite: [a grade of "C" or better in ASIA 2760 (150.276)] or written consent of instructor.



**ASIA 3770** Advanced Japanese Cr.Hrs.6  
(Formerly 150.377) This course is designed for those who have taken ASIA 2770 (150.277) Intermediate Japanese or have basic linguistic skills in Japanese and wish to improve their ability in the Japanese language previously acquired. Prerequisite: [a grade of "C" or better in ASIA 2770 (150.277)] or written consent of instructor.

**ASIA 3792** Linguistic Analysis of Japanese Cr.Hrs.3  
This course analyses structures and usage of the Japanese language, using linguistic methodology to understand the language and associated social, cultural, psychological, and cognitive factors. Prerequisite: [a grade of "C" or better in ASIA 2770 (150.277)] or written consent of instructor.

### 8.3 Canadian Studies Program

**Program Coordinator:** Fiona MacDonald  
**Program Office:** 520 Fletcher Argue  
**Telephone:** 204 474 7368  
**E-mail:** [macdonaf@cc.umanitoba.ca](mailto:macdonaf@cc.umanitoba.ca)  
**Website:** [umanitoba.ca/canadian\\_studies/](http://umanitoba.ca/canadian_studies/)

#### 8.3.1 Program Information,

This is an interdisciplinary program that offers a comprehensive and focused approach to the study of Canada. Students will examine Canadian politics, economics, society and culture within a national and international context. A knowledge of French is an asset but it is not required.

The "List of Approved Courses in Canadian Studies" below identifies courses that may be used toward partial fulfillment of the requirements for Canadian Studies. These courses are also identified on Aurora Student with the course attribute of "Canadian Studies Requirement."

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Program.](#)

#### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in six credit hours from the list of approved courses in Canadian Studies. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

#### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in a six credit hours from the list of approved courses in Canadian Studies.

#### 8.3.2 Canadian Studies,

Undergraduate Calendar

#### Honours Program

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### Single Honours

Single Honours will consist of:

- 1) 54 credit hours from the list of approved courses in Canadian Studies, to be taken in the three Honours years, of which a maximum of 24 credit hours and minimum of 12 credit hours must be taken in any one department. At least 24 credit hours must be taken in courses designated as Honours courses. One of these may be a 4000-level interdisciplinary Honours seminar in Canadian Studies.
- 2) The minimum total credit hours that students must hold in order to complete an Honours program in Canadian Studies are 30 in Year 1; 30 in Year 2; 24 in Year 3; and 24 in Year 4.

#### Double Honours

Double Honours shall consist of:

- 1) 36 credit hours in one of the participating departments, not necessarily courses in the Canadian field, selected in accordance with the regulations of that department.
- 2) 36 credit hours chosen from the list of approved courses in Canadian Studies. At least 18 credit hours from the 36 must be Honours courses. One of these may be a 4000-level interdisciplinary seminar in Canadian Studies.
- 3) The minimum total credit hours that students must hold in order to complete a Double Honours program in Canadian Studies are 30 in Year 1; 30 in Year 2; 24 in Year 3; and 24 in Year 4.

A reading knowledge of French, while not required, is recommended. Students should note that, for certain specific Honours courses in the Canadian field, a reading knowledge of French is, in fact, a prerequisite.

Each of the participating departments is represented by at least one member on the Canadian Studies Program Committee. The initial academic advisor for the program is the committee as a whole or any one of its members. Students who are interested in Canadian Studies may obtain further information from the Canadian Studies Program Coordinator. Students should consult the appropriate department upon entering the program regarding prerequisites for specific courses.



UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>MAJOR<sup>1</sup> TOTAL: 30 CREDIT HOURS</b>			
6 credit hours in courses numbered at the 1000 or 2000 level from the list of approved courses in Canadian Studies	24 credit hours from the list of approved courses in Canadian Studies, of which at least 6 credit hours must be numbered at the 3000 level		
<b>MINOR (CONCENTRATION)<sup>2</sup> TOTAL: 18 CREDIT HOURS</b>			
6 credit hours in courses numbered at the 1000 or 2000 level from the list of approved courses in Canadian Studies	12 credit hours from the list of approved courses in Canadian Studies		
<b>HONOURS SINGLE<sup>3</sup></b>			
6 credit hours in courses numbered at the 1000 or 2000 level from the list of approved courses in Canadian Studies	18 credit hours from the list of approved courses in Canadian Studies (6 credit hours are required in three subject fields), plus 12 credit hours in ancillary options	18 credit hours from the list of approved courses in Canadian Studies, of which at least 6 hours must be in an Honours course, plus 6 credit hours in ancillary options	18 credit hours from the list of approved Honours courses in Canadian Studies plus 6 credit hours in ancillary options
<b>HONOURS DOUBLE<sup>3</sup></b>			
6 credit hours in courses numbered at the 1000 or 2000 level from the list of approved courses in Canadian Studies	12 credit hours from the list of approved courses in Canadian Studies, 12 credit hours in other Honours field, plus 6 credit hours in options	12 credit hours in approved courses in Canadian Studies, 12 credit hours in other Honours field	12 credit hours in approved courses in Canadian Studies, at least 12 credit hours in other Honours field
<b>NOTES:</b>			
<p><sup>1</sup> A Major consists of 30 credit hours, chosen from the list of approved courses in Canadian Studies, of which 6 credit hours must be taken from courses numbered at the 3000 level and 12 credit hours, but no more, must be taken in one department on the list. A maximum of 12 credit hours in courses numbered at the 1000 level may be used toward the 30 credit hour Major.</p> <p><sup>2</sup> A Minor (Concentration) consists of 18 credit hours including at least 6 credit hours from each of two departments, chosen from the list of approved courses in Canadian Studies. A maximum of 6 credit hours in courses numbered at the 1000 level may be used toward the 18 credit hour Minor.</p> <p><sup>3</sup> Honours Courses: all 4000 level courses.</p>			

For course descriptions, see departmental listings.

### 8.3.2.1 List of Approved Courses in Canadian Studies, List of Approved Courses in Canadian Studies

In the following list of approved courses the designation (H) indicates an Honours course. Courses designated (USB) are offered in French at Université de Saint-Boniface.

\* In the list below indicates courses no longer offered.

#### Faculty of Arts

##### Canadian Studies

CDN 1130	Introduction to Canadian Studies	6
CDN 3730	Canadian Identity: An Interdisciplinary Approach	3
CDN 4410	Seminar in Canadian Studies (H)	6
Anthropology		



ANTH 2040	Native North America: A Sociocultural Survey (B)	3
ANTH 2041	Les Amérindiens de l'Amérique du nord: une étude socioculturelle (B) (USB)	3
ANTH 2640	Manitoba Prehistory	3
ANTH 3460*	Native North American Ethnology (B)	3
ANTH 3461	Ethnologie des Amérindiens de l'Amérique du Nord (B) (USB)	3
ANTH 3500	Peoples of the Arctic (B)	3
ANTH 3501	Peuples de l'Arctique (B) (USB)	3
ANTH 3550	Canadian Subcultures	3
ANTH 3551	Sous-cultures canadiennes (USB)	3
ANTH 3910	Archaeological Field Training (D,E)	6
Economics		
ECON 1210	Introduction to Canadian Economic Issues and Policies	3
ECON 1211	Introduction aux politiques et aux problèmes économiques canadiens (USB)	3
ECON 2280	Social Welfare and Human Resources	6
ECON 2310	Canadian Economic Problems	6
ECON 2311	Les problèmes économiques du Canada (USB)	6
ECON 2350	Community Economic Development	3
ECON 2360*	Women in the Canadian Economy	6
ECON 2362	Economics of Gender	3
ECON 3300	Canadian Economic History	6
ECON 3301	Histoire économique du Canada (USB)	6
ECON 3510	Industrial Relations (Cross-listed with Labour Studies LABR 3510)	6
ECON 3690	Economic Issues of Health Policy	3
ECON 3720	Urban and Regional Economics and Policies	3
018.352*	Introductory Regional Economics	3
018.353*	Intermediate Regional Economics	3
018.357*	Health Economics	3
018.360*	Workshop in the Economy of Canada	6
English, Film, and Theatre		
ENGL 2270	Canadian Literature	6
ENGL 3270	Studies in Canadian Literature	3
ENGL 3271	Studies in Canadian Literature	3
004.275*	Canadian Literature (H)	6
004.288*	Canadian Literature to 1967	3
004.289*	Canadian Literature after 1967	3
004.377*	Canadian Poetry	6
004.378*	The Canadian Novel	6
004.388*	Studies in Canadian Literature	6
FILM 2430	The Canadian Film	3
Français (USB)		
FRAN 2831	L'individu et le pays (USB)	3
FRAN 2881	Civilisation canadienne-française (USB)	3
FRAN 3531	Le théâtre québécois (USB)	3
FRAN 3541	Le théâtre de l'Ouest (USB)	3
FRAN 3831	L'époque de la contestation (USB)	3
FRAN 3841	La révolution tranquille et le roman (USB)	3
FRAN 3851	Le théâtre de l'Ouest: poésie, nouvelles (USB)	3
FRAN 3861	Le théâtre de l'Ouest: romans (USB)	3
FRAN 4831	Littérature de l'Acadie et des	3



	Cajuns (USB)	
French, Spanish and Italian		
FREN 2700	Poésie et théâtre canadiens- français (B)	3
FREN 3140	Roman canadien-français (B)	3
FREN 3850	Civilisation canadienne-française (C)	3
044.247*	French-Canadian Literature in Translation	6
044.348*	Littérature canadienne-française (H)	3
044.353*	Littérature canadienne-française (B)	3
History		
HIST 1390	History of Colonial Canada: 1500-1885 (C)	3
HIST 1400	History of the Canadian Nation Since 1867 (C)	3
HIST 1440	History of Canada (C)	6
HIST 1441	Histoire du Canada (USB)	6
HIST 2191	Histoire économique et sociale canadienne du XIXe siècle (USB)	6
HIST 2280	Aboriginal History of Canada (C)	6
HIST 2282	Inventing Canada (C)	3
HIST 2284	Democracy and Dissent: Contesting Canada (C)	3
HIST 2286	Modern Canada (C)	3
HIST 2950*	Early Canada: from the Earliest Settlement to 1867 (C)	6
HIST 2951*	Les origines du Canada: depuis la première colonie jusqu'en 1867 (USB)	6
HIST 2960*	The New Dominion: 1867 to 1921 (C)	6
HIST 2961*	Le nouveau Dominion: de 1867 à 1921 (USB)	6
HIST 2970*	Modern Canada: 1921 to the Present (C)	6
HIST 2971	Le Canada moderne: de 1921 à nos jours (USB)	6
HIST 3050	Canada since 1945 (C)	6
HIST 3052	Canada since the 1960s (C)	3
HIST 3054	Canada and the United States (C)	3
HIST 3220*	The History of Canadian-American Relations (A,C)	6
HIST 3250	Canada and the World, 1867 to the Present (C)	6
HIST 3690	History of Northern Canada (C)	6
HIST 3721	Histoire du Manitoba (C) (USB)	6
HIST 3730	A History of Western Canada (C)	6
HIST 3780	Studies in Canadian History 1 (C)	3
HIST 3781	Études choisies en histoire du Canada 1 (USB)	3
HIST 3790	Studies in Canadian History 2 (C)	3
HIST 3791	Études choisies en histoire du Canada 2 (USB)	3
HIST 3910	The Ukrainians in Canada (C)	3
HIST 4060	Gender History in Canada (C) (H)	6
HIST 4280	Topics in the Cultural History of Canada (C) (H)	6
HIST 4340	Introduction to Archival Science (G) (H)	6
HIST 4390*	The History of White Attitudes and Policies towards Native Peoples in North America (C) (H)	6
HIST 4680	Social History of Health and Disease in Modern Canada (C) (H)	6
HIST 4700	Canada, 1896 to the Present (C) (H)	6



HIST 4720	History of Manitoba (C) (H)	6
HIST 4890	Canadian Social History (C) (H)	6
HIST 4900*	The Hudson's Bay Company and British North America (C) (H)	6
HIST 4950*	History of Quebec (C) (H)	6
011.133*	History of Canada from 1534 (C)	6
011.133F*	Histoire du Canada (USB)	6
011.254*	North American Indian (A,C,S)	6
011.324*	Protestantism and the Development of the Canadian Community, 1749- 1970 (C,S)	6
011.438*	Intellectual History of Canada (C) (H)	3
011.449*	The New Canada, 1867-96 (S) (H)	6
Icelandic ICEL 2230	Contemporary Icelandic-Canadian Literature	3
ICEL 2300*	Icelandic-Canadian Literature (H)	6
ICEL 3460*	Laura Goodman Salverson	3
ICEL 4440	The Icelanders in Canada (H)	3
012.445*	Stephan G. Stephansson (H)	3
Labour Studies LABR 3510	Industrial Relations (Cross-listed with Economics ECON 3510)	6
Linguistics LING 1360	Languages of Canada	3
Native Studies		
NATV 1200	The Native Peoples of Canada	6
NATV 1220	The Native Peoples of Canada, Part 1	3
NATV 1240	The Native Peoples of Canada, Part 2	3
NATV 1250	Introductory Cree 1	3
NATV 1260	Introductory Cree 2	3
NATV 1270	Introductory Ojibway 1	3
NATV 1280	Introductory Ojibway 2	3
NATV 1290	Introductory Inuktitut	3
NATV 2020	The Métis of Canada	3
NATV 2040	Native Peoples of the Northern Plains	3
NATV 2060	The Native Peoples of the Eastern Woodlands	3
NATV 2070	The Native Peoples of the Subarctic	3
NATV 2080	Inuit Society and Culture	3
NATV 2220	Native Societies and the Political Process	3
NATV 2250	Intermediate Cree	6
NATV 2270*	Intermediate Ojibway	6
NATV 2272	Intermediate Ojibway 1	3
NATV 2274	Intermediate Ojibway 2	3
NATV 2300	Cree Literature	3
NATV 2320	Structure of the Cree Language	3
NATV 2410	Canadian Native Literature	3
NATV 2420	Inuit Literature in Translation	3
NATV 2450	Images of Indians in North American Society	3
NATV 3000	Selected Topics	3
NATV 3240	Native Medicine and Health	3
NATV 3270	The Métis Nation	3
NATV 3280	Aboriginal Peoples and the Canadian Justice System	3
NATV 3300	Native Language Planning and Development	3
NATV 3310	Canadian Law and Aboriginal Peoples	3
NATV 3320*	Aboriginal Organizations	3
NATV 3340*	Circumpolar Cultures and Lifestyles	3
NATV 3370	Political Development in the North	3
NATV 3380	Cultural Constructions of Gender in Canadian Aboriginal Societies	3
NATV 4200	First Nations Government	3
NATV 4210	Seminar in Contemporary and Historical Métis Issues	3
NATV 4220	Environment, Economy and Aboriginal People	3
NATV 4230	Traditional Knowledge and Native Studies Research	3



NATV 4240	Arctic Lifestyles	3
NATV 4250	Topics on Aboriginal Identities	3
NATV 4260*	Sacred Lands and Sacred Spaces of Indigenous Peoples	3
NATV 4280	Missionaries, Colonialism and Aboriginal Peoples	3
032.090*	Introductory Cree	6
032.091*	Introductory Ojibway	6
032.121*	Intermediate Ojibway	6
032.130*	Intermediate Cree	6
032.205*	Coastal Indians of Canada	3
032.220*	Native Societies and the Political Process	3
032.321*	The Native Identity	6
032.323*	Native Peoples and the Law 2	3
032.325*	Native Peoples and the Law 1	6
032.373*	Art of the North American Native Peoples	3
Political Studies		
POLS 1070	Law, Politics and Power in Canada	3
POLS 2070	Introduction to Canadian Government	6
POLS 2071	Introduction au système gouvernemental Canadien (USB)	6
POLS 2561	Questions d'actualité en politique Canadienne (USB)	6
POLS 2570*	Introduction to Public Administration	6
POLS 2571	Initiation à l'administration publique (USB)	6
POLS 3100	Gender and Politics in Canada	3
POLS 3170	The Canadian Charter of Rights and Freedoms	3
POLS 3470	Canadian Public Management	3
POLS 3520	Canadian Foreign and Defence Policy	6
POLS 3561	Politique étrangère Canadienne (USB)	6
POLS 3670	Canadian Political Parties	3
POLS 3860	Canadian Federalism	3
POLS 3960	Canadian Politics	6
POLS 4140	Canadian Political Ideas (H)	3
POLS 4150	Indigenous Governance (H)	3
POLS 4180	Provincial Politics in Canada (H)	3
POLS 4190	Manitoba Politics and Government (H)	3
POLS 4660	The State in the Economy (H)	6
POLS 4860	The Canadian Policy Process (H)	6
019.156*	Introduction to Canadian Government	6
019.156F*	Introduction au système gouvernemental Canadienne (USB)	6
019.206*	Urban and Local Politics	6
019.256*	Issues of Canadian Politics	6
019.266*	Human Rights and Civil Liberties	6
019.286*	Canadian Political Parties	6
019.356*	Canadian Foreign Policy	6
019.366*	Quebec and the Canadian Political System (H)	3
019.368*	Canadian Defense Policy	3
019.476*	Manitoba Politics and Voting Behaviour	6
019.487*	Government and Public Sector Unionism (H)	6
Religion		
RLGN 2410	Religion in Canada (C)	6
RLGN 2411*	Les religions au Canada (USB)	6
RLGN 2590	Religion and Social Issues (C)	3
RLGN 2591	La religion et les problèmes sociaux (USB)	3
020.272*	Dimensions of Religiosity in Contemporary Canadian Literature	6
Slavic Studies		
UKRN 2410	Ukrainian Canadian Cultural Experience	3
UKRN 2420*	Ukrainian Canadian Literature	3
UKRN 2430*	Ukrainian Canadian Folklore	3
Sociology		
SOC 2320	Canadian Society and Culture	3
SOC 2321	La société Canadienne et sa culture (USB)	3
SOC 2370	Ethnic Relations	3
SOC 2371	Rapports ethniques (USB)	3
SOC 2531	Sociologie du Manitoba (USB)	6
SOC 2610	Sociology of Criminal Justice and Corrections	3
SOC 2620	The Sociology of Aging	3
SOC 3380	Power, Politics and the Welfare State	3
SOC 3470*	Political Sociology	3



SOC 3471	Sociologie politique (USB)	3
SOC 3700	Sociology of Law	3
Ukrainian Canadian Heritage Studies		
UCHS 3100	The Ukrainian Arts in Canada	3
<b>School of Art</b>		
FAAH 3260	Canadian Art and Architecture to World War II	3
FAAH 3270	Canadian Art Since World War II	3
FAAH 3430	Inuit Art	3
054.358*	Inuit Culture and Art	3
054.375*	Canadian Art 1	3
054.376*	Canadian Art 2	3
<b>Clayton H. Riddell Faculty of Environment, Earth, and Resources</b>		
Geography		
GEOG 2450*	The Making of the Prairie Landscape (A)	6
GEOG 2570	Geography of Canada (A)	3
GEOG 2900	Geography of Canadian Prairie Landscapes (A)	3
GEOG 3431	Géographie du Canada (USB)	3
GEOG 3480	Canadian Problems	3
GEOG 3481	Particularités de la géographie du Canada (USB)	3
GEOG 3700*	Canada: The Making of the Human Landscape (A)	6
GEOG 3701	Canada: évolution de l'écoumène (USB)	6
GEOG 3900	Geography of Manitoba (A)	3
053.369*	Historical Geography of Indian Peoples in the Canadian Fur Trade	6
053.378*	Historical Geography of Canadian Indians (A)	6
053.470*	Historical Geography of the Ojibway Indians (H)	3

### 8.3.3 Canadian Studies Course Descriptions

**CDN 1130** Introduction to Canadian Studies Cr.Hrs.6  
(Formerly 151.113) This course will introduce students to an interdisciplinary study of Canadian themes and issues from early exploration to the present. The emergence of Canada as a nation will be studied within the context of four themes: the aboriginal past; the land; political and economic structures; art and culture. As a first-year course in Canadian studies students will be encouraged to develop their writing, research and library skills.

**CDN 3730** Canadian Identity: An Interdisciplinary Approach Cr.Hrs.3  
(Formerly 151.373) An interdisciplinary lecture/seminar (art, economics, history, literature) course which will explore Canadian Identity. Themes to be studied include the Aboriginal past, French/British colonization, Land/regions and Ethnic diversity.

**CDN 4410** Seminar in Canadian Studies Cr.Hrs.6  
(Formerly 151.441) A seminar course whose content may vary from year to year. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.4 Catholic Studies Program

**Acting Program Coordinator:** Denis Bracken  
**Program Office:** 118 St. Paul's College  
**Telephone:** 204 474 9165  
**E-mail:** [bracken@cc.umanitoba.ca](mailto:bracken@cc.umanitoba.ca)  
**Website:** [umanitoba.ca/catholic\\_studies](http://umanitoba.ca/catholic_studies)

#### 8.4.1 Program Information,

The story of the Roman Catholic Church and its members, and the story of their interactions with history, the arts and sciences, human thinking and belief – all these together, in the dynamism and richness of their interplay, form the substance of the human culture which is Catholicism. That culture is the subject matter of Catholic Studies.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### Minor Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in CATH 1190 and a grade of "C" or better in at least three credit hours from the List of Approved Courses in Catholic Studies.



**8.4.2 Catholic Studies,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
CATH 1190 and at least 3 credit hours from the List of Approved Courses in Catholic Studies	<ul style="list-style-type: none"> <li>• RLGN 3870</li> <li>• 9 credit hours from the List of Approved Courses in Catholic Studies</li> </ul>		

**List of Approved Courses in Catholic Studies  
Faculty of Arts**

**Catholic Studies**

CATH 1190	Introduction to Catholic Studies	3
CATH 2000	Special Topics in Catholic Studies	3
CATH 2010	Literature and Catholic Culture 1	3
CATH 2020	Literature and Catholic Culture 2	3
CATH 2100	Field Studies in Catholic Culture	6
<b>History</b>		
HIST 2180	The History of Catholicism to 1540 (G)	3
HIST 2990	The History of Catholicism since 1540 (G)	3
HIST 2991	Histoire de l'Église catholique depuis 1540 (G)	3
HIST 4820*	The Crusades (D)	6
<b>Philosophy</b>		
PHIL 2320*	Thomas Aquinas and Medieval Philosophy	6
PHIL 2780	Thomas Aquinas	3
<b>Religion</b>		
RLGN 2840	The Second Vatican Council (A)	3
RLGN 2850	Contemporary Issues in Roman Catholicism (A)	3
RLGN 3870	The Thought of Bernard Lonergan (A)	3

**School of Art**

<b>Art History</b>		
FAAH 2060	Medieval to Early Renaissance Art and Architecture	3
FAAH 2070	Renaissance to Baroque Art and Architecture	3
FAAH 3130	Topics in Medieval Art and Architecture	3
FAAH 3140	Topics in Renaissance and Baroque Art and Architecture	3
FAAH 3280	Early Byzantine Art and Architecture	3

\* Indicates course no longer offered.

**8.4.3 Catholic Studies Course Descriptions**

**CATH 1190** Introduction to Catholic Studies Cr.Hrs.3  
(Formerly 160.119) An initiation into diversity, richness, and significance of Roman Catholicism in its many different forms and expressions, seeking to highlight the resources and techniques available for pursuing an interdisciplinary study of Catholicism as a field of intellectual inquiry.

**CATH 2000** Special Topics in Catholic Studies Cr.Hrs.3  
The subject matter of this course will vary from year to year, but it will deal with a special topic of current interest in the interdisciplinary program in Catholic Studies. Prerequisite: [a grade of "C" or better in CATH 1190 (160.119)] or written consent of program coordinator. As the course content will vary from year to year, students may take this course more than once for credit.

**CATH 2010** Literature and Catholic Culture 1 Cr.Hrs.3  
The course will focus on the portrayals of Catholic Culture in literature of the 20th Century prior to Vatican II Council. Students will also study the formal features of poetry, drama, and prose focusing on the Catholic Tradition. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL

1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)] or written consent of instructor.

**CATH 2020** Literature and Catholic Culture 2 Cr.Hrs.3  
The course will focus on the portrayals of Catholic Culture in literature of the 20th and 21st Century following Vatican II Council. Students will also study the formal features of poetry, drama, and prose involving the Catholic Tradition. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)] or written consent of instructor.

**CATH 2100** Field Studies in Catholic Culture Cr.Hrs.6  
Offered as part of the Summer Session, this course consists of on-campus study followed by travel to major sites and museums. Prerequisite: none, but CATH 1190 (160.119) is recommended.



## 8.5 Central and East European Studies Program

**Acting Program Coordinator:** Elena Baraban

**Program Office:** 322 Fletcher Argue

**Telephone:** 204 474 9735

**E-mail:** [baraban@cc.umanitoba.ca](mailto:baraban@cc.umanitoba.ca)

**Website:** [umanitoba.ca/european\\_studies/](http://umanitoba.ca/european_studies/)

### 8.5.1 Program Information

The disintegration of the former Soviet Union has altered the social, political, and economic environment of Central and Eastern Europe. The emergence of new independent countries and the transition from an environment dominated by communist political and economic structures continue to reshape Europe. This program offers an array of courses from five departments. It explores past and present issues in the region.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs](#).

### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in both six credit hours of Russian, German, Polish, Ukrainian or Yiddish and six credit hours from the list of approved courses in Central and East European Studies below. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is

required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in both six credit hours of Russian, German, Polish, Ukrainian or Yiddish and six credit hours from the list of approved courses in Central and East European Studies below.

### Honours Program (Double Honours Only)

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs](#).

This program is only available to students registered in the Honours program in Economics, History or Political Studies.

Courses used toward the Major, Minor (Concentration) or Honours may not also be used toward a Major, Minor (Concentration) or Honours in the department in which they are offered.

### 8.5.2 Central and East European Studies

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
6 credit hours in a language from courses numbered at the 1000 or 2000 level in Russian, German, Ukrainian, Polish or Yiddish, plus 6 credit hours from the List of Approved Courses in Central and East European Studies	18 credit hours from the List of Approved Courses in Central and East European Studies below, of which at least 6 credit hours must be taken from each of 2 different departments <sup>5</sup>		
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
6 credit hours in a language from courses numbered at the 1000 or 2000 level in Russian, German, Ukrainian, Polish or Yiddish, plus 6 credit hours from the List of Approved Courses in Central and East European Studies	36 credit hours from the List of Approved Courses in Central and East European Studies below, of which at least 12 credit hours must be taken from each of two different departments <sup>5</sup>		
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
6 credit hours in a language from courses numbered at the 1000 or 2000 level in Russian, German, Ukrainian, Polish or Yiddish, plus 6 credit hours from the List of Approved	6 credit hours from the List of Approved Courses in Central and East European Studies below		



Courses in Central and East European Studies <sup>4</sup>			
<b>HONOURS DOUBLE<sup>1</sup></b>			
6 credit hours in a language from courses numbered at the 1000 level <sup>2</sup> in Russian, German, Ukrainian, Polish or Yiddish, plus 18 credit hours from the List of Approved Courses in Central and East European Studies	<ul style="list-style-type: none"> <li>• either UKRN 2720 or RUSN 2810<sup>3</sup></li> <li>• 6 credit hours from the following, Economics: ECON 2270; History: HIST 2490, HIST 2600, HIST 2610, HIST 2660, HIST 2680; Slavic Studies: RUSN 2280, RUSN 2290, UKRN 2770, UKRN 2780</li> <li>• 12 credit hours in other Honours field</li> <li>• 6 credit hours in options</li> </ul>	<ul style="list-style-type: none"> <li>• either both RUSN 3200 and RUSN 3210, or both UKRN 3950 and UKRN 3960<sup>3</sup></li> <li>• HIST 3030 and UKRN 3300</li> <li>• minimum of 12 credit hours in other Honours field</li> </ul>	<ul style="list-style-type: none"> <li>• 12 credit hours from courses numbered at the 4000 level in German, History, Political Studies, Russian or Ukrainian<sup>6</sup></li> <li>• minimum of 12 hours of credit in other Honours field</li> </ul>

**NOTES:**

<sup>1</sup> The Double Honours program is only available to students registered in the Honours program in Economics, History, or Political Studies.

<sup>2</sup> Students should note that while the majority of students begin language instruction with courses numbered at the 1000 level, in exceptional circumstances and with the approval of the committee, students may begin language instruction with courses numbered at the 2000 level.

<sup>3</sup> Students who begin with 6 hours of courses numbered beyond the 1000 level in Russian or Ukrainian may take either 6 or 12 credit hours in Russian or Ukrainian or 6 or 12 credit hours in another language approved by the committee.

<sup>4</sup> Students who have declared a Major in Russian, German, or Ukrainian can either take 12 credit hours from at least two different subject fields from the List of Approved Courses in Central and East European Studies, or 6 credit hours from courses numbered at the 1000 or 2000 level in a language (Russian, German, Ukrainian, or Polish) other than their declared Major and 6 credit hours from the List of Approved Courses in Central and East European Studies.

<sup>5</sup> Students may substitute up to 6 credit hours with language courses numbered at the 1000 or 2000 level in Russian, German, Ukrainian, Polish or Yiddish.

<sup>6</sup> Courses must be individually approved by the program coordinator as relevant to Central and East European Studies. For information on available courses, please contact the program coordinator.

**List of Approved Courses in Central and East European Studies**

Faculty of Arts

Economics

ECON 2270	European Economic History	6
ECON 2510	The Economy of Ukraine	3
ECON 4450*	Comparative Economic Systems	6

German and Slavic Studies

GRMN 1300	Masterpieces of German Literature in English Translation	3
GRMN 1310	Love in German Culture in English Translation	3
GRMN 2120	Introduction to German Culture 1	3
GRMN 2130	Introduction to German Culture 2	3
GRMN 3260	Representations of the Holocaust	3
GRMN 3262	Representations of the Holocaust in English Translation	3
GRMN 3270	Studies in Contemporary German Cinema	3
GRMN 3280	Sex, Gender and Cultural Politics in the German-Speaking World	3
GRMN 3282	Sex, Gender and Cultural Politics in the German-Speaking World in English Translation	3



GRMN 3290	History in Literature in German-Speaking Countries	3
GRMN 3390	German Representations of War	3
GRMN 3392	German Representations of War	3
GRMN 3520*	Special Topics in Comparative German and Slavic Studies	6
GRMN 3530	Special Topics in Comparative German and Slavic Studies	3
HUNG 1000	Introduction to Hungarian 1	3
HUNG 1002	Introduction to Hungarian 2	3
POL 1900	Love, Heroes and Patriotism in Contemporary Poland	3
POL 2600	Polish Culture until 1918	3
POL 2610	Polish Culture 1918 to the Present	3
RUSN 1400	Masterpieces of Russian Literature in Translation	3
RUSN 2280	Russian Culture 1	3
RUSN 2290	Russian Culture 2	3
RUSN 2310	Exploring Russia through Film	3
RUSN 2410	Russian Literature after Stalin	3
RUSN 2740	Literature and Revolution	3
RUSN 2750*	Contemporary Russian Literature and Film	3
RUSN 2770*	Masterpieces of Russian Literature in Translation	3
SLAV 2240	East European Literature 1	3
SLAV 2250	East European Literature 2	3
SLAV 2260	Russia, Ukraine and Poland Cultures in Dialogue 1	3
SLAV 2270	Russia, Ukraine and Poland Cultures in Dialogue 2	3
SLAV 3520*	Special Topics in Comparative German and Slavic Studies	6
SLAV 3530	Special Topics in Comparative German and Slavic Studies	3
SLAV 3920	Gogol	3
UKRN 2200	Ukrainian Myth, Rites and Rituals	3
UKRN 2770	Ukrainian Culture 1	3
UKRN 2780	Ukrainian Culture 2	3
UKRN 2800	Literature and Revolution in Ukraine	3
UKRN 2820	Holodomor and Holocaust in Ukrainian Literature and Culture	3
UKRN 3100	Ukrainian Story Writing Through the Ages	3
UKRN 3300	Literature of Independent Ukraine	3
UKRN 3670*	Contemporary Ukrainian Literature	3
UKRN 3850*	Ukrainian Short Story	3
History		
HIST 2080	The Byzantine Empire and the Slavic World (D)	3
HIST 2240	History of Antisemitism and the Holocaust (E)	6
HIST 2490	History of Russia	6
HIST 2600	Introduction to Ukraine	3
HIST 2610	Making of Modern Ukraine	3
HIST 2660	History of the Soviet Union (E)	3
HIST 2661	Histoire de l'Union soviétique (E)	3
HIST 2840	A History of Russia to 1917	3
HIST 2841	Histoire de la Russie jusqu'en 1917 (E)	3
HIST 3030	Issues in Ukrainian History	3
HIST 3060*	German and German-Jewish History, 1780-1933 (E)	3
HIST 3062	German and German-Jewish History, 1618 to the Present (E)	6
HIST 3064	German and German-Jewish History, 1618-1900 (E)	3
HIST 3066	German and German-Jewish History, 1900 to the Present (E)	3
HIST 3180*	Modern Russia: The Soviet Era and Beyond	6
HIST 4300	Problems in Modern Russian and Soviet History	6
011.255*	History of Ukraine	6
Political Studies		
POLS 3720	Politics, Government and Society in Ukraine	3
POLS 3810	Introduction to Marxism	3
POLS 2920*	Government, Politics and Society in Ukraine	6
POLS 4810*	Seminar in Marxist-Leninist and Contemporary Marxist Political Theory	6
Religion		
RLGN 1350	The History of Eastern Christianity (A)	6
RLGN 3280	Hasidism (A)	3
School of Art		
FAAH 3160	Topics in 20th Century Art (only when topic focuses on Central and Eastern Europe)	3
FAAH 3280	Early Byzantine Art and Architecture	3
FAAH 3290	Later Byzantine Art and Architecture	3
FAAH 4070	Seminar in Art History 1 (when its focus is on Central and Eastern Europe)	3
FAAH 4080	Seminar in Art History 2 (when its focus is on Central and Eastern Europe)	3

Clayton H. Riddell Faculty of Environment, Earth, and Resources



Geography

GEOG 3600\* Geography of Ukraine

3

\* Indicates course no longer offered.

Students are advised to consult the respective departmental *Calendar* entries for specific information on prerequisites and restrictions.

## 8.6 The Changing Workplace Program

**Program Coordinator:** Arts General Office

**Program Office:** 3rd Floor Fletcher Argue

**Telephone:** 204 474 9100

**E-mail:** [arts\\_inquiry@umanitoba.ca](mailto:arts_inquiry@umanitoba.ca)

information received from employees and mid-career working adults interested in pursuing a degree. Successful completion of this concentration provides learners with an understanding of the workplace in its current context and its changing nature.

### Concentration Program

#### 8.6.1 Program Information.

The Changing Workplace is a Concentration only available to students in the B.A. Integrated Studies degree program. This program is not available as a Minor program.

For entry to the Concentration, the prerequisite is a minimum grade of "C" or better in the first 6 credit hours of courses required for the Concentration.

The Changing Workplace is an interdisciplinary concentration and has been developed in response to

The Concentration in The Changing Workplace will consist of 18 credit hours from the following list of courses. Students must meet the departmental prerequisites for entry into any course in this list. No course can be used to satisfy more than one Concentration.

Changing Workplace Concentration		
Anthropology		
ANTH 2500	Culture, Environment, and Technology (B)	3
Economics		
ECON 1210	Introduction to Canadian Economic Issues and Policies	3
Labour Studies		
LABR 1260	Working for a Living	3
LABR 1290	Introduction to the Canadian Labour Movement	3
LABR 2100	The Political Economy of Labour	3
LABR 3060	Workplace Health and Safety	3
Philosophy		
PHIL 2830	Business Ethics	3
Sociology		
SOC 2390	Social Organization	3
NOTE: Specific course sections of ECON 2610 Special Topics in Economics (3) may satisfy the concentration requirement. Students should contact the Department of Economics for information.		
For course descriptions, see departmental listings.		



## 8.7 Department of Classics

**Head:** Mark Joyal

**General Office:** 364 University College

**Telephone:** 204 474 9502

**E-mail:** [classics@umanitoba.ca](mailto:classics@umanitoba.ca)

**Website:** [umanitoba.ca/classics](http://umanitoba.ca/classics)

### 8.7.1 Program Information,

Classics programs focus on the languages, literature and material cultures of ancient Greece and Rome. The two cultures are considered for their formative role at the beginnings of western civilization and for their continuing influence on modern civilization. Although courses, and entire programs, are available to students without any Latin or Greek, those intending to pursue specialist studies in any field of classical studies are urged to begin study of the languages as early as possible. The department, through academic staff members with expertise in art history and archaeology, offers a variety of opportunities for travel courses and fieldwork overseas.

The Department of Classics offers Major and Minor (Concentration) programs in Classical Studies, Greek, and Latin.

### 8.7.2 Classical Studies,

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in the first six credit hours in Classics or the first six credit hours from the list of approved courses offered by other departments as noted below. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

#### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in both CLAS 1270 and CLAS 1280, or written permission of the department head.

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
CLAS 1270 and CLAS 1280	24 credit hours in Classical Studies (Within the 24 credit hours, a student may include up to 12 credit hours in Latin or Greek courses and may substitute up to 15 credit hours from the approved list of courses offered by other departments as noted below.)		
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
CLAS 1270 and CLAS 1280	42 credit hours in Classical Studies (Within the 42 credit hours, a student may include up to 18 credit hours in Latin or Greek courses and may substitute up to 21 credit hours from the approved list of courses offered by other departments as noted below.)		
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
CLAS 1270 and CLAS 1280	12 credit hours in Classical Studies (Within the 12 credit hours, a student may include up to 6 credit hours in Latin or Greek courses and may substitute up to 9 credit hours from the approved list of courses offered by other departments as noted below.)		

#### List A: Approved List of Courses Offered by Other Departments Acceptable for Credit in a Major/Minor (Concentration) in Classical Studies

History



HIST 2420	The Medieval World (D)	6
HIST 3270*	Roman Law in Medieval Europe (D)	3
HIST 4740*	The Golden Age of Byzantium (D)	6
HIST 4840*	The Early Middle Ages	6
011.206*	The Emergence of the Medieval World (D)	3
011.207*	The Early and High Middle Ages, 800-1300 A.D. (D)	3
011.264*	History of the Byzantine Empire	6
Philosophy		
PHIL 2650	Plato	3
PHIL 2660	Aristotle	3
Religion		
RLGN 2550	History of Early Christian Thought	3
RLGN 3640	Religion in the Hellenistic World	3

\* Indicates course no longer offered.

For course descriptions, see the departmental listings in this *Calendar*.

#### 8.7.4 Greek,

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs](#).

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

#### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in both GRK 1010 and GRK 1020, or written consent of the department head. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

#### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in both GRK 1010 and GRK 1020, or written consent of the department head.

#### 8.7.5 Greek,

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
GRK 1010 and GRK 1020	GRK 1310, GRK 2770 plus 36 credit hours in Greek		
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
GRK 1010 and GRK 1020	GRK 1310 plus 9 credit hours in Greek		

#### 8.7.6 Latin,

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs](#).

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

#### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in both LATN 1080 and LATN 1090, or written consent of the department head. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

#### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in both LATN 1080 and LATN 1090, or written consent of the department head.

#### 8.7.7 Latin,

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			



LATN 1080 and LATN 1090	LATN 1320, LATN 2760 plus 36 credit hours in Latin
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>	
LATN 1080 and LATN 1090	LATN 1320 plus 9 credit hours in Latin

### 8.7.8 Classics Course Descriptions-Classical Studies-1000 Level

**CLAS 1270** Introduction to Ancient Greek Culture Cr.Hrs.3 (Formerly 003.127) Ancient archaeological and literary evidence (in English translation) is the basis for a survey of the major social, political, religious, intellectual, artistic and literary institutions and achievements of the Greeks from the Bronze Age to the early Roman Imperial Period. The Greeks are studied in the context of the ancient Mediterranean world but also with reference to their continuing contributions to world civilization.

**CLAS 1280** Introduction to Ancient Roman Culture Cr.Hrs.3 (Formerly 003.128) Ancient archaeological and literary evidence (in English translation) is the basis for a survey of the major social, political, religious, intellectual, artistic and literary institutions and achievements of the Romans, from the period of the monarchy to the onset of the Middle Ages. The Romans are studied in the context of the ancient Mediterranean world but also with reference to their continuing contributions to world civilization.

### 8.7.8 Classics Course Descriptions-Classical Studies-2000 Level

**CLAS 2140** Greek History: Pre-Classical Greece, 1200-479 BC Cr.Hrs.3  
This course covers the crucial formative centuries which prefigured the Classical period of Greek history. It focuses upon the Dark Age (ca. 1200-700), when the political framework of later Greece was established, and the subsequent cultural renaissance of the seventh and sixth centuries BC.

**CLAS 2150** Greek History: Classical Greece, 479-323 BC Cr.Hrs.3  
This course covers the heyday of imperial, democratic Athens, her crushing defeat by Sparta, now allied with Persia, and the ensuing crisis of the city-state which culminated in Greek subjection to Macedonian kings, Philip and Alexander.

**CLAS 2160** Roman History: The Roman Republic, 753-30 BC Cr.Hrs.3  
This course covers the history of Rome from its supposed foundation in 753 BC to the end of the Republic in 30 BC. The course considers not only the events of Roman Republican history but also how historians of ancient Rome interpreted these events.

**CLAS 2170** Roman History: The Roman Empire, 30 BC-AD 337 Cr.Hrs.3  
This course covers the history of Rome under emperors, from the ascension of Augustus to the death of Constantine, the first Christian emperor, in AD 337. An important theme in the course is the rise of Christianity.

**CLAS 2460** Field Studies in Greek Archaeology and History Cr.Hrs.6 (Formerly 003.246) Offered as part of the Summer Session, the course consists of three weeks of on-campus study followed by three weeks of travel to major sites and museums. Prerequisite: none, but one or more of CLAS 1270 (003.127) or CLAS 1280 (003.128) or CLAS 2140 or CLAS 2150 or CLAS 2670 (003.267) is recommended. As the course content will vary from year to year, students may take this course more than once for credit.

**CLAS 2490** Field Studies in Roman Archaeology and History Cr.Hrs.6 (Formerly 003.249) Offered as part of the Summer Session, the course consists of three weeks of on-campus study followed by three weeks of travel to major sites and museums. Prerequisite: none, but one or more of CLAS 1270 (003.127) or CLAS 1280 (003.128) or CLAS 2160 or CLAS 2170 or CLAS 2680 (003.268) is recommended. As the course content will vary from year to year, students may take this course more than once for credit.

**CLAS 2520** Greek and Roman Mythology Cr.Hrs.3 (Formerly 003.252) A survey of Greek and Roman myths of creation and the gods with attention to the nature and definition of myth; Greek and Roman legends; the connections of mythology with religious beliefs and cults; and with the literature and arts of Western civilization.

**CLAS 2612** Greek Literature in Translation Cr.Hrs.3  
A survey in English of selected works of such major figures in Greek literature as Homer, Aeschylus, Sophocles, Euripides, Aristophanes, Herodotus, Thucydides, and Plato. The course includes discussion of these and other works on the arts and literature of the world. Students may not hold credit for both CLAS 2612 and the former CLAS 3610 (003.361).

**CLAS 2622** Latin Literature in Translation Cr.Hrs.3  
A survey in English of selected works of such major figures in Latin literature as Vergil, Ovid, Terence, Livy, Cicero, Horace and Seneca. The course includes discussion of the influence of these and other works on the arts and literature of the world. Students may not hold credit for both CLAS 2622 and the former CLAS 3620 (003.362).

**CLAS 2670** Greek Art and Archaeology Cr.Hrs.3 (Formerly 003.267) A survey, illustrated with slides, of the Minoan, Mycenaean, and classical Greek civilizations. The relevant archaeological sites and artistic works will be studied.

**CLAS 2680** Roman Art and Archaeology Cr.Hrs.3 (Formerly 003.268) A survey, illustrated with slides, of the civilization and art of the Roman world. The Etruscan civilization and archaeological sites of Hellenistic Greece as they influence the art of Republican and Imperial Rome will be studied.



**CLAS 2710** Greek and Latin Elements in English Cr.Hrs.3 (Formerly 003.271) A systematic study of the contribution of the classical languages to modern English, including the vocabulary of the sciences. The course is intended as a practical means of enhancing English vocabulary while it also emphasizes that the linguistic contributions are a reflection of the broad historical and cultural influences of classical antiquity on the modern world.

### 8.7.8 Classics Course Descriptions-Classical Studies-3000 Level

**CLAS 3250** Aegean and Italian Prehistory Cr.Hrs.3  
This course provides a detailed archaeological and historical view of Mediterranean culture and society from the Neolithic period of the sixth millennium BC through the early centuries of the first millennium BC. The course ends with a look ahead to the Early Iron Age.

**CLAS 3260** Hellenistic Civilization: History and Archaeology Cr.Hrs.3  
The Hellenistic period spans the years from the death of Alexander the Great in 323 BC to the death of the Ptolemaic queen Cleopatra VII in 31 BC. This course explores both the political and, more generally, the cultural history of the period using both textual and archaeological sources.

**CLAS 3270** The World of Late Antiquity: History and Archaeology Cr.Hrs.3  
This course examines the later Roman Empire, beginning with the reign of Constantine in the early fourth century and ending in the early fifth century. It combines historical and archaeological sources for the study of political, religious and social developments within the period.

**CLAS 3650** Religion in Ancient Greece Cr.Hrs.3 (Formerly 003.365) The religious beliefs and practices of the Greeks from the prehistoric period through the beginnings of the Hellenistic period as related to their political, social, intellectual, and domestic institutions; based on the study of both literary and archaeological evidence.

**CLAS 3660** Religion in Ancient Rome Cr.Hrs.3 (Formerly 003.366) The religious beliefs and practices of the Romans from earliest times until the reign of Constantine as related to their political, social, intellectual, and domestic institutions; based on the study of both literary and archaeological evidence from Italy and the rest of the Roman world.

**CLAS 3680** Studies in a Classical Literary Genre 1 Cr.Hrs.3 (Formerly 003.368) The content of this course will vary, being devoted each time to a particular type of Greek and Roman literature such as epic, tragedy, comedy, satire, rhetoric, the novel, historical writings, scientific writing, etc. Lectures and discussions of the literature and its influence will be based on readings in English translation. As the course content will vary from year to year, students may take this course more than once for credit.

**CLAS 3710** Aspects of Classical Culture 1 Cr.Hrs.3 (Formerly 003.371) The content of this course will vary, being devoted each time to the investigation of a special area of Classical civilization such as athletics, technology, the erotic, the occult, cuisine, law, medicine, architecture, education. Lectures and discussions will be based on the

study of both archaeological and literary evidence. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.7.8 Classics Course Descriptions-Greek-1000 Level

**GRK 1010** Introduction to the Reading of Ancient Greek 1 Cr.Hrs.3 (Formerly 003.101) Readings in Ancient Greek poetry and prose with related exercises in grammar and composition intended to prepare students to read Classical and Hellenistic Greek.

**GRK 1020** Introduction to the Reading of Ancient Greek 2 Cr.Hrs.3 (Formerly 003.102) Further readings in Ancient Greek poetry and prose with related exercises in grammar and composition intended to prepare students to read Classical and Hellenistic Greek. Students may not hold credit for both GRK 1020 (003.102) and GRK 1030 (003.103). Prerequisite: a grade of "C" or better in GRK 1010 (003.101).

**GRK 1030** New Testament Greek Cr.Hrs.6 (Formerly 003.103) The grammar and syntax of New Testament Greek. Normally taught only in the Approved Teaching Centres. May be used for credit towards the Major or Minor in Greek only with written consent of department head. Students may not hold credit for GRK 1030 (003.103) and any of: GRK 1010 (003.101) or GRK 1020 (003.102).

**GRK 1060** Introductory Modern Greek 1 Cr.Hrs.3 (Formerly 003.106) A practical introduction to the written and spoken language for those with little or no knowledge of Modern Greek. Personal instruction in script, vocabulary, aural comprehension, pronunciation and syntax is supplemented with the use of audio recording in the laboratory or via other media such as the internet. Not for credit towards the Major or Minor in Classical Studies.

**GRK 1070** Introductory Modern Greek 2 Cr.Hrs.3 (Formerly 003.107) The continuation of GRK 1060 (003.106) with further personal instruction in vocabulary, aural comprehension, pronunciation and syntax supplemented with the use of audio recordings in the laboratory or via other media such as the internet. Not for credit towards the Major or Minor in Classical Studies. Prerequisite: [a grade of "C" or better in GRK 1060 (003.106)] or written consent of department head.

**GRK 1310** Intermediate Readings in Ancient Greek Cr.Hrs.3 (Formerly 003.131) Further readings in ancient Greek poetry and prose with related exercises in grammar and composition intended to advance the student's skill at reading Classical and Hellenistic Greek. Prerequisite: [a grade of "C" or better in GRK 1030 (003.103)] or [a grade of "C" or better in both GRK 1010 (003.101) and GRK 1020 (003.102)].

**GRK 1330** The Acts of the Apostles Cr.Hrs.3 (Formerly 003.133) The complete Book of Acts is read in Greek with attention to related textual, linguistic and historical matters. Prerequisite: [a grade of "C" or better in both GRK 1010 (003.101) and GRK 1020 (003.102)] or [a grade of "C" or better in GRK 1310 (003.131)] or written



consent of department head.

### 8.7.8 Classics Course Descriptions-Greek- 2000 Level

**GRK 2060** Intermediate Modern Greek 1 Cr.Hrs.3  
(Formerly 003.206) Continued study and practice in oral and written communication in Modern Greek. Course work includes conversation, prose composition and reading of selected texts from Greek literary works and popular media. Not for credit towards a Major or Minor in Classical Studies. Prerequisite: [a grade of "C" or better in GRK 1070 (003.107)] or written consent of department head.

**GRK 2070** Intermediate Modern Greek 2 Cr.Hrs.3  
(Formerly 003.207) Continued study and practice in oral and written communication in Modern Greek. Course work includes conversation, prose composition and reading of selected texts from Greek literary works and popular media. Not for credit towards a Major or Minor in Classical Studies. Prerequisite: [a grade of "C" or better in GRK 2060 (003.206)] or written consent of department head.

**GRK 2730** Readings on Heroic and Mythological Themes Cr.Hrs.3  
(Formerly 003.273) Selected readings from the works of Homer, Herodotus and Sophocles. Prerequisite: a grade of "C" or better in GRK 1310 (003.131).

**GRK 2750** Readings on the Intellectual Life of Classical Athens Cr.Hrs.3  
(Formerly 003.275) Selected readings from texts by Euripides, Thucydides and Plato. Prerequisite: a grade of "C" or better in GRK 1310 (003.131).

**GRK 2770** Greek Prose Composition and Sight Translation Cr.Hrs.3  
(Formerly 003.277) Assignments in writing Greek prose and practice in the techniques for effective reading of prose and poetry at sight. Prerequisite: a grade of "C" or better in GRK 1310 (003.131).

**GRK 2790** History of the Greek Language Cr.Hrs.3  
(Formerly 003.279) A survey of the language from its Indo-European pre-history to the modern era. The phonological, morphological and lexical aspects of the language are investigated in the light of Greek literary and inscriptional documents and some comparative evidence from cognate languages. Prerequisite: [a grade of "C" or better in GRK 1310 (003.131)] or [a working knowledge of Modern Greek and written consent of the department head].

**GRK 2810** Prose Writings of the Hellenistic and Greco-Roman Periods Cr.Hrs.3  
(Formerly 003.281) Reading of selected literary and historical documents relating to Judaism and early Christianity. Prerequisite: a grade of "C" or better in GRK 1310 (003.131) or GRK 1330 (003.133).

### 8.7.8 Classics Course Descriptions-Greek- 3000 Level

**GRK 3750** Homer Cr.Hrs.3  
(Formerly 003.375) At least three complete books of the Iliad or Odyssey are read with attention to compositional technique and metre. Prerequisite: a grade of "C" or better in GRK 2730 (003.273) or GRK 2750 (003.275).

**GRK 3770** Greek Poetry of the Archaic Period Cr.Hrs.3  
(Formerly 003.377) Reading of selections from Hesiod, the Homeric Hymns and such lyric poets as Sappho, Alcaeus, Anacreon, Pindar and Bacchylides. Prerequisite: a grade of "C" or better in GRK 2730 (003.273) or GRK 2750 (003.275).

**GRK 3790** The Greek Tragedians Cr.Hrs.3  
(Formerly 003.379) Readings of at least two tragedies from among those of Aeschylus, Sophocles or Euripides. Prerequisite: a grade of "C" or better in GRK 2730 (003.273) or GRK 2750 (003.275).

**GRK 3810** Aristophanes Cr.Hrs.3  
(Formerly 003.381) Readings of at least two complete comedies. Prerequisite: a grade of "C" or better in GRK 2730 (003.273) or GRK 2750 (003.275).

**GRK 3830** The Greek Historians Cr.Hrs.3  
(Formerly 003.383) Selected readings from the works of Herodotus and Thucydides and/or the historical works of Xenophon. Prerequisite: a grade of "C" or better in GRK 2730 (003.273) or GRK 2750 (003.275).

**GRK 3850** Plato Cr.Hrs.3  
(Formerly 003.385) Readings of two of the shorter dialogues or of selections from several dialogues. Prerequisite: a grade of "C" or better in GRK 2730 (003.273) or GRK 2750 (003.275).

**GRK 3870** The Attic Orators Cr.Hrs.3  
(Formerly 003.387) Readings from the works of such orators as Isocrates, Lysias and Demosthenes. Prerequisite: a grade of "C" or better in GRK 2730 (003.273) or GRK 2750 (003.275).

**GRK 3930** Advanced Studies in Greek Prose Literature Cr.Hrs.3  
Readings in a particular genre such as philosophy, history, or rhetoric with substantial reading in secondary critical or interpretive literature. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**GRK 3940** Advanced Studies in Greek Poetry Cr.Hrs.3  
Readings in a particular genre such as epic, tragedy, comedy, lyric or epigram with substantial reading in secondary critical or interpretive literature. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.



### 8.7.8 Classics Course Descriptions-Latin- 1000 Level

**LATN 1080** Introduction to the Reading of Latin 1 Cr.Hrs.3 (Formerly 003.108) Readings in Latin poetry and prose with related exercises in grammar and composition intended to prepare students to read Classical and Medieval Latin.

**LATN 1090** Introduction to the Reading of Latin 2 Cr.Hrs.3 (Formerly 003.109) Further readings in Latin poetry and prose with related exercises in grammar and composition intended to prepare students to read Classical and Medieval Latin. Prerequisite: a grade of "C" or better in LATN 1080 (003.108).

**LATN 1320** Intermediate Readings in Latin Cr.Hrs.3 (Formerly 003.132) Further readings in Latin prose and poetry with related exercises in grammar and syntax as continued preparation for the reading of Classical and Medieval Latin. Prerequisite: a grade of "C" or better in both LATN 1080 (003.108) and LATN 1090 (003.109).

### 8.7.8 Classics Course Descriptions-Latin- 2000 Level

**LATN 2720** Selected Readings in Republican and Augustan Poetry Cr.Hrs.3 (Formerly 003.272) Readings from among the comedies of Plautus and Terence, the shorter poems of Catullus, and the Metamorphoses of Ovid. Prerequisite: a grade of "C" or better in LATN 1320 (003.132).

**LATN 2740** Selected Readings in Republican and Augustan Prose Cr.Hrs.3 (Formerly 003.274) Readings from among the works of Livy and Caesar and the letters and philosophical writings of Cicero. Prerequisite: a grade of "C" or better in LATN 1320 (003.132).

**LATN 2760** Latin Prose Composition and Sight Translation Cr.Hrs.3 (Formerly 003.276) Assignments in writing Latin prose and practice in the techniques for effective reading of poetry and prose at sight. Prerequisite: a grade of "C" or better in LATN 1320 (003.132).

**LATN 2780** History of the Latin Language Cr.Hrs.3 (Formerly 003.278) A survey of the language from its Indo-European pre-history to its position as the matrix of the Romance languages. Phonological, morphological and lexical aspects of the language are investigated in the light of Latin documents and some comparative evidence from cognate languages. Prerequisite: a grade of "C" or better in LATN 1320 (003.132).

**LATN 2800** Readings in Medieval or Renaissance Latin Cr.Hrs.3 (Formerly 003.280) Selections of prose and poetry written after the beginning of the fourth century after Christ. Prerequisite: a grade of "C" or better in LATN 1320 (003.132).

### 8.7.8 Classics Course Descriptions-Latin- 3000 Level

**LATN 3740** Roman Comedy Cr.Hrs.3 (Formerly 003.374) Reading of at least two plays from among the comedies of Plautus and Terence. Prerequisite: a grade of "C" or better in LATN 2720 (003.272) or LATN 2740 (003.274).

**LATN 3760** Orations of Cicero Cr.Hrs.3 (Formerly 003.376) Reading of at least two complete speeches from among the political and forensic works of Cicero. Prerequisite: a grade of "C" or better in LATN 2720 (003.272) or LATN 2740 (003.274).

**LATN 3780** Roman Satire Cr.Hrs.3 (Formerly 003.378) Reading of selected Satires of Horace and Juvenal and of excerpts from the Apocolocyntosis of Seneca and the Satyricon of Petronius. Prerequisite: a grade of "C" or better in LATN 2720 (003.272) or LATN 2740 (003.274).

**LATN 3800** Lyric and Elegiac Poetry of the Augustan Age Cr.Hrs.3 (Formerly 003.380) Selected Odes and Epodes of Horace and amatory elegies of Propertius, Ovid and Tibullus. Prerequisite: a grade of "C" or better in LATN 2720 (003.272) or LATN 2740 (003.274).

**LATN 3820** Vergil's Aeneid Cr.Hrs.3 (Formerly 003.382) Reading of at least three books of the Aeneid. Prerequisite: a grade of "C" or better in LATN 2720 (003.272) or LATN 2740 (003.274).

**LATN 3840** Vergil's Eclogues and Georgics Cr.Hrs.3 (Formerly 003.384) Reading of the Eclogues in their entirety and at least two books of the Georgics. Prerequisite: a grade of "C" or better in LATN 2720 (003.272) or LATN 2740 (003.274).

**LATN 3860** The Roman Historians Cr.Hrs.3 (Formerly 003.386) Reading of selected passages from the works of Livy, Caesar, Sallust and Tacitus. Prerequisite: a grade of "C" or better in LATN 2720 (003.272) or LATN 2740 (003.274).

**LATN 3880** Poetry of the Silver Age Cr.Hrs.3 (Formerly 003.388) Reading of one or two tragedies of Seneca with selections from the works of Martial, Statius or Lucan. Prerequisite: a grade of "C" or better in LATN 2720 (003.272) or LATN 2740 (003.274).

**LATN 3932** Advanced Studies in Latin Prose Literature Cr.Hrs.3 Readings in a particular genre such as philosophy, history, or rhetoric with substantial reading in secondary critical or interpretive literature. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**LATN 3942** Advanced Studies in Latin Poetry Cr.Hrs.3 Reading in a particular genre such as epic, lyric, comedy or elegy with substantial reading in secondary critical or interpretive literature. Prerequisite: written consent of department head. As the course content will vary from year



to year, students may take this course more than once for credit.

## 8.8 Cross Disciplinary Programs,

The Faculty of Arts offers the following Cross-Disciplinary programs. For course descriptions and prerequisites, refer to departmental sections in this Calendar.

Asian Studies  
Canadian Studies  
Catholic Studies  
Central and East European Studies  
The Changing Workplace  
Global Political Economy  
History of Art  
Labour Studies  
Latin American Studies  
Medieval and Renaissance Studies  
Ukrainian Canadian Heritage Studies  
Women's and Gender Studies

See [Section 8.2](#)  
See [Section 8.3](#)  
See [Section 8.4](#)  
See [Section 8.5](#)  
See [Section 8.6](#)  
See [Section 8.13](#)  
See [Section 9.1](#)  
See [Section 8.18](#)  
See [Section 8.19](#)  
See [Section 8.21](#)  
See [Section 8.28](#)  
See [Section 8.29](#)

## 8.9 Department of Economics

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### 8.9.1 Program Information,

The economy is important to all Canadians, and economics is the field of study that helps us understand our world: wages and employment, economic growth, productivity, wealth and poverty, government budgets and taxation, resource exploitation, business practices, inflation, recession, regional economic differences. In economics we study the history and current reality of these issues. We learn the principles and techniques necessary to gain a sound understanding of the choices and problems facing us during our lifetime.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the General or Advanced Major, the prerequisite is a grade of "C" or better in both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, or the former ECON 1200. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, or the former ECON 1200.

### Honours Program

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

It is recommended that students complete ECON 2800, ECON 3800, and ECON 3810 before attempting ECON 4430.

Where it appears appropriate, a senior Honours student may be allowed to substitute a graduate course for an undergraduate course in Economics.

Honours students are advised to select their ancillary options from the following disciplines: Geography, History, Mathematics, Political Studies, Statistics, Sociology and Philosophy. However, other fields may be selected to satisfy study or career interests.

### Preparation for Graduate Studies

Honours students contemplating graduate work should normally seek to obtain a good background in both mathematics and statistics. For mathematics, it is strongly recommended that they take ECON 2530 Introduction to Mathematical Economics and seriously consider ECON 3730 Topics in Mathematical Economics. For a good statistics background, ECON 4120 Intermediate Econometrics and ECON 4130 Seminar in Econometrics in combination with some basic statistics courses are highly



desirable. Such students are also advised to include at least one course in economic history in their program. These, or equivalents, are required of doctoral candidates at the University of Manitoba.

**Other**

No student may hold credit for more than six credit hours from the following: ECON 2450(3), ECON 2460(3), ECON 2700(3), ECON 3700(3). No student may hold credit for more than six credit hours from the following: ECON 2470(3), ECON 2480(3), ECON 2800(3), ECON 3800(3).

Combinations of courses for the Major, Minor and Honours programs, other than those listed below, may be permitted by written consent of the department head. Similarly, Honours courses may be taken by students in the General

Major or Advanced Major programs with the written consent of the instructor and the department head; an average grade of "B" in all Economics courses is normally required before such consent may be given.

Students may offer the cross-listed courses ABIZ 2390 Introductory Environmental Economics (same as ECON 2390), ABIZ 3080 Introduction to Econometrics (same as ECON 3180), and ABIZ 4120 Intermediate Econometrics (same as ECON 4120) toward any of the above programs.

For information regarding the Canadian Studies program, see Section 8.3; for the Central and East European Studies program, see Section 8.5.

**8.9.2 Economics,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR<sup>1,2</sup> TOTAL: 30 CREDIT HOURS</b>			
Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, or the former ECON 1200 <sup>3</sup>	<ul style="list-style-type: none"> <li>Two of: ECON 2450<sup>2</sup>, ECON 2460<sup>2</sup>, ECON 2470<sup>2</sup>, ECON 2480<sup>2</sup></li> <li>An additional 18 credit hours in Economics, of which at least 6 hours must be from courses numbered at the 3000 level</li> </ul>		
<b>ADVANCED MAJOR<sup>1</sup> TOTAL: 48 CREDIT HOURS</b>			
Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, or the former ECON 1200 <sup>3</sup>	<ul style="list-style-type: none"> <li>ECON 2450<sup>3,4</sup>, ECON 2460<sup>3,4</sup>, ECON 2470<sup>3,4</sup>, ECON 2480<sup>3,4</sup>, ECON 3170<sup>4</sup>, ECON 3180<sup>4</sup></li> <li>ECON 4820<sup>4</sup> or ECON 4830<sup>4</sup></li> <li>An additional 18 credit hours in Economics</li> </ul>		
<b>MINOR (CONCENTRATION)<sup>1</sup> TOTAL: 18 CREDIT HOURS</b>			
Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, or the former ECON 1200 <sup>3</sup>	An additional 12 credit hours in Economics		
<b>HONOURS SINGLE<sup>5, 6, 9, 10</sup></b>			
Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, or the former ECON 1200 <sup>3</sup>	<ul style="list-style-type: none"> <li>54 credit hours in Economics courses, to include the following:                             <ul style="list-style-type: none"> <li>- ECON 2700, ECON 2800, ECON 3700, ECON 3800, ECON 3810, ECON 4410</li> <li>- One of the following combinations: ECON 3170 and ECON 3180; ECON 4120 and ECON 4130</li> <li>- A further 27 credit hours in Economics, of which: no more than 6 additional hours can be from courses numbered at the 2000 level (other than ECON 2530); and at least 6 additional hours must be from courses numbered at the 4000 level</li> </ul> </li> <li>6 credit hours from the following Mathematics courses: MATH 1300, MATH 1310, MATH 1500, MATH 1510, MATH 1520, MATH 1690, MATH 1700, MATH 1710</li> <li>24 credit hours in ancillary options</li> </ul>		
<b>HONOURS DOUBLE<sup>5, 7, 9, 10</sup></b>			



<p>Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, or the former ECON 1200<sup>8</sup></p>	<ul style="list-style-type: none"> <li>• 36 credit hours in Economics courses, to include the following:                     <ul style="list-style-type: none"> <li>- ECON 2700, ECON 2800, ECON 3700</li> <li>- One of the following combinations: ECON 3170 and ECON 3180; ECON 4120 and ECON 4130</li> <li>- A further 21 credit hours in Economics, of which: no more than 6 additional hours can be from courses numbered at the 2000 level (other than ECON 2530); and at least 6 hours must be from courses numbered at the 4000 level</li> </ul> </li> <li>• At least 36 credit hours in other Honours field</li> <li>• At least 6 credit hours in ancillary options</li> </ul>
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**NOTES:**

<sup>1</sup> For the purposes of satisfying program requirements in the Major, Advanced Major and Minor (Concentration) programs, and of satisfying course prerequisites, Honours courses are acceptable as substitutes for general courses according to the following schedule: ECON 2700 for ECON 2450; ECON 3700 for ECON 2460; ECON 2800 for ECON 2470; ECON 3800 for ECON 2480. For each pair, students may hold credit for only one course.

<sup>2</sup> In cases where students have been granted three hours of unallocated transfer credit in Economics at the 1000 level, and have achieved additional credits in Economics from The University of Manitoba, and wish to declare Economics as a General Major without having full credit in ECON 1200, then the Years 2-3 requirement for a Major in Economics will be ECON 2450 and ECON 2470, plus an additional 18 credit hours in Economics of which at least 6 hours must be at the 3000 level.

<sup>3</sup> Students in the Advanced Major are urged to take ECON 2450, ECON 2460, ECON 2470 and ECON 2480 in Year 2, but must take at least two of these courses in Year 2.

<sup>4</sup> Course ECON 4820 or ECON 4830 may not be taken until the final year of the program and only after students have successfully completed ECON 3170 and ECON 3180, plus all of the following: ECON 2450, ECON 2460, ECON 2470, ECON 2480. A grade of "C" or better in each course is required.

<sup>5</sup> For the purpose of satisfying program requirements in the Honours programs and of satisfying course prerequisites, General theory courses are acceptable substitutes for Honours theory courses according to the following schedule: As substitute for ECON 2700, ONE of the following conditions must be satisfied: (i) grades of B or better in each of ECON 2450 and ECON 2460; (ii) a grade of A or better in ECON 2450. As substitute for ECON 2800, ONE of the following conditions must be satisfied: (i) grades of B or better in each of ECON 2470 and ECON 2480; (ii) a grade of A or better in ECON 2470.

<sup>6</sup> To meet a minimum required background in mathematics, Single Honours students must complete 6 credit hours in Mathematics in Year 2 (or Year 3 with departmental approval). Students contemplating entering the Single Honours Program in Economics are advised to take the Mathematics requirement in their first year of studies. Students contemplating graduate work in Economics should refer to the notes above "Preparation for Graduate Studies."

<sup>7</sup> Students contemplating Double Honours in Economics and Mathematics are advised to consult the Department of Economics for specific details.

<sup>8</sup> A maximum of 6 credit hours at the 1000 level may be used towards a Major, Minor (Concentration) or Honours Program.

<sup>9</sup> Ancillary options are courses taken from outside the Honours field of study.

<sup>10</sup> Honours courses: ECON 2700, ECON 2800, ECON 3700, ECON 3800, ECON 3810 and all 4000 level courses.

**8.9.3 Economics-Mathematics Joint Honours Program,**

The Department of Economics and the Department of Mathematics (Faculty of Science) offer a Joint Honours program for students wishing in-depth study in Economics and Mathematics. For Mathematics course listings, refer to the Faculty of Science chapter in the *Calendar*.



**Joint Honours Program**

Students in the Joint Honours program will follow the regulations outlined in the Honours program, see [Section 3.3: Honours Degree Program](#).

**8.9.4 Economics-Mathematics Joint Honours Program,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS<sup>7</sup> TOTAL: 120 CREDIT HOURS</b>			
<ul style="list-style-type: none"> <li>Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, or the former ECON 1200; MATH 1300<sup>1</sup>; MATH 1500<sup>1,2</sup>; MATH 1700<sup>1,2</sup>; STAT 1000<sup>3</sup>; COMP 1010<sup>3</sup></li> <li>Plus 9 credit hours of electives<sup>6</sup> which should include the required "Written English" course</li> </ul>	<ul style="list-style-type: none"> <li>ECON 2700, ECON 2800, MATH 2202, MATH 2352, MATH 2750, MATH 2800</li> <li>Plus 6 credit hours of approved electives<sup>5</sup></li> </ul>	<ul style="list-style-type: none"> <li>ECON 3700; ECON 3800; ECON 3180<sup>3</sup> (or STAT 2000)<sup>3</sup>; MATH 2600<sup>3</sup>; MATH 3230; MATH 3300<sup>5</sup>; MATH 3400; MATH 3700 (or MATH 3710); MATH 3740 (or MATH 3760)</li> <li>Plus 24 credit hours of approved Economics courses<sup>4</sup></li> <li>Plus 6 credit hours of Mathematics courses at the 3000 or 4000 level, which must include at least one of MATH 3510, MATH 3600, MATH 3810, MATH 3820, or any Mathematics course at the 4000 level</li> </ul>	
30 HOURS	30 HOURS	60 HOURS	

**NOTES:**

<sup>1</sup> MATH 1310 may be taken in place of MATH 1300; MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700.

<sup>2</sup> The combination of MATH 1500 (or MATH 1510 or MATH 1520) and MATH 1700 may be replaced by MATH 1690.

<sup>3</sup> Some courses may be taken in a different year than indicated; STAT 1000, COMP 1010, MATH 2600 and ECON 3180 (or STAT 2000) may be taken in Year 2. The normal prerequisite for ECON 3180 is ECON 3170, which will be waived for students in this program who have completed Year 1.

<sup>4</sup> Of the 24 credit hours in electives in Economics in Years 3 and 4, no more than 6 credit hours may be at the 2000 level or below (with the exception of ECON 2530) and at least 6 credit hours must be at the 4000 level.

<sup>5</sup> MATH 3300, plus 3 of the 6 unallocated credit hours in Mathematics in Years 3 and 4, may be replaced by MATH 3350.

<sup>6</sup> Students are encouraged to consider useful courses in Computer Science and Statistics as electives.

<sup>7</sup> Economics Honours courses: ECON 2700, ECON 2800, ECON 3700, ECON 3800, ECON 3810 and all 4000 level courses.

**8.9.5 Economics-Statistics Joint Honours Program,**

The Department of Economics and the Department of Statistics (Faculty of Science) offer a Joint Honours program for students wishing in-depth study in Economics and Statistics. For Statistics course listings, refer to the Faculty of Science chapter in the *Calendar*.

**Joint Honours Program**

Students in the Joint Honours program will follow the regulations outlined in the Honours program, see [Section 3.3: Honours Degree Program](#).

**8.9.6 Economics-Statistics Joint Honours Program,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS<sup>5</sup> TOTAL: 120 CREDIT HOURS</b>			



<ul style="list-style-type: none"> <li>Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, or the former ECON 1200; MATH 1300<sup>1</sup>; MATH 1500<sup>1,2</sup>; MATH 1700<sup>1,2</sup>; STAT 1000<sup>3</sup>; COMP 1010<sup>3</sup></li> <li>Plus 9 credit hours of electives which should include the required "Written English" course</li> </ul>	<ul style="list-style-type: none"> <li>ECON 2700, ECON 2800, MATH 2202, MATH 2352, MATH 2750, STAT 2000, STAT 2400</li> <li>Plus 3 credit hours of approved Economics electives<sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>ECON 3700, ECON 3800, MATH 3740 or MATH 3760, STAT 3400, STAT 3470, STAT 3480, STAT 3490, STAT 3800</li> <li>Plus 3 credit hours of approved Economics electives<sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>ECON 4120, ECON 4130, STAT 4100, STAT 4520, STAT 4530, STAT 4580</li> <li>Plus 12 credit hours of approved Economics electives<sup>4</sup></li> </ul>
30 HOURS	30 HOURS	30 HOURS	30 HOURS

**NOTES:**

<sup>1</sup> MATH 1310 may be taken in place of MATH 1300; MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700.

<sup>2</sup> The combination of MATH 1500<sup>1</sup> and MATH 1700<sup>1</sup> may be replaced by MATH 1690.

<sup>3</sup> Some courses may be taken in a different year than indicated; STAT 1000, COMP 1010, MATH 2600 and ECON 3180 (or STAT 2000) may be taken in Year 2.

<sup>4</sup> Of the 18 credit hours of electives in Economics in Years 2, 3 and 4, no more than 6 credit hours may be at the 2000 level or below; ECON 2530 and ECON 3180 are recommended in Year 2 or 3. The normal prerequisite for ECON 3180 is ECON 3170, which will be waived for students in this program who have completed Year 1.

<sup>5</sup> Economics Honours courses: ECON 2700, ECON 2800, ECON 3700, ECON 3800, ECON 3810 and all 4000 level courses.

**8.9.7 Economics Course Descriptions-1000**

**Level**

**ECON 1010** Introduction to Microeconomic Principles Cr.Hrs.3

This course introduces students to the study of microeconomics. Topics include: demand and supply, price determination, market structure and resource allocation; the behaviour of consumers and firms; and market intervention by government. Selected economic topics are examined such as: welfare programs, environmental regulation, the economics of discrimination, pay equity, and taxation. Students may not hold credit for ECON 1010 and any of: ECON 1011 or ECON 1210 (018.121) or ECON 1211 (018.121) or ECON 1220 (018.122) or ECON 1221 (018.122) or the former ECON 1200 (018.120) or the former ECON 1201 (018.120).

**ECON 1020** Introduction to Macroeconomic Principles Cr.Hrs.3

This course introduces students to the study of macroeconomics. Topics include: aggregate performance and policy; the determinants of national income, employment and the price level, the role of monetary and fiscal policies in stabilizing the economy and promoting economic growth. Students may not hold credit for ECON 1020 and any of: ECON 1021 or ECON 1210 (018.121) or ECON 1211 (018.121) or ECON 1220 (018.122) or ECON 1221 (018.122) or the former ECON 1200 (018.120) or the former

ECON 1201 (018.120).

**ECON 1210** Introduction to Canadian Economic Issues and Policies Cr.Hrs.3

(Formerly 018.121) A survey of some major principles underlying, and influences acting upon the Canadian economy and its regions. Students may not hold credit for ECON 1210 (018.121) and any of: ECON 1211 (018.121) or ECON 1010 or ECON 1011 or ECON 1020 or ECON 1021 or the former ECON 1200 (018.120) or the former ECON 1201 (018.120).

**ECON 1220** Introduction to Global and Environmental Economic Issues and Policies Cr.Hrs.3

(Formerly 018.122) A survey of some major principles and policies characterizing the world economy and the environment. Students may not hold credit for ECON 1220 (018.122) and any of: ECON 1221 (018.122) or ECON 1010 or ECON 1011 or ECON 1020 or ECON 1021 or the former ECON 1200 (018.120) or the former ECON 1201 (018.120).

**8.9.7 Economics Course Descriptions-2000**

**Level**

**ECON 2270** European Economic History Cr.Hrs.6

(Formerly 018.227) A study of the economic aspects of the evolution of Europe from the Middle Ages to the present, with emphasis on the development of modern economic institutions. Students may not hold credit for both ECON



2270 (018.227) and the former ECON 2271 (018.227).  
Prerequisite: none.

**ECON 2310** Canadian Economic Problems Cr.Hrs. 6  
(Formerly 018.231) Application of economic theory to a broad range of problems such as agriculture, trade, foreign ownership, regional disparities, competition policy, education. Students may not hold credit for both ECON 2310 (018.231) and ECON 2311 (018.231). Prerequisite: a grade of "C" or better in six credit hours of 1000 level Economics.

**ECON 2350** Community Economic Development Cr.Hrs.3  
(Formerly 018.235) A study of the economic development problems of northern and native communities in Manitoba. Students may not hold credit for ECON 2350 (018.235) and any of: NATV 3120 or the former NATV 4310 (032.431). Prerequisite: none.

**ECON 2362** Economics of Gender Cr.Hrs.3  
This course will use both neo-classical and feminist economic theory to explore how gender differences may lead to different economic outcomes for men and women, both within families and in the marketplace. Topics covered may include gender aspects of production (both inside and outside the household), leisure, marriage and divorce, fertility, childcare, education, migration, aging and development. Students may not hold credit for both ECON 2362 and the former ECON 2360 (018.236). Prerequisite: a grade of "C" or better in ECON 1010 or ECON 1011 or ECON 1210 (018.121) or ECON 1211 (018.121) or the former ECON 1200 (018.120) or the former ECON 1201 (018.120).

**ECON 2390** Introduction to Environmental Economics Cr.Hrs.3  
(Formerly 018.239) The economics of management of water, air and land resource quality, and the economics of conservation. The economic implications of environmental standards, licensing, criteria and pollution charges will be illustrated by current issues. Students may not hold credit for both ECON 2390 (018.239) and ABIZ 2390 (061.239). Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Economics] or written consent of instructor.

**ECON 2400** Introduction to Energy Economics Cr.Hrs.3  
(Formerly 018.240) A study of the economic relationships in energy production, consumption, demand and supply, pricing and conservation, energy policy and the development of new and renewable energy sources. Prerequisite: a grade of "C" or better in six credit hours of 1000 level Economics.

**ECON 2410** The Manitoba Economy Cr.Hrs.3  
(Formerly 018.241) Application of economic theory to the historical development and present structure of the provincial economy. Prerequisite: none.

**ECON 2420** Economics of the Labour Process and Labour Relations Cr.Hrs.6  
(Formerly 018.242) An examination of theoretical approaches to paid and unpaid work, the organization of labour processes, the production and reproduction of labour, and labour markets in Canada today, as well as possible alternatives. Students may not hold credit for ECON 2420 (018.242) and any of: LABR 2420 (153.242) or LABR 2100. Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Economics] or [a grade of "C" or better in both

LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)].

**ECON 2450** Microeconomic Theory and Its Applications 1 Cr.Hrs.3  
(Formerly 018.245) Theories of consumer demand, production, cost, factor demand and market structure, with attention to institutional and historical framework, and with policy applications. Students may not hold credit for ECON 2450 (018.245) and any of: ECON 2451 (018.245) or ECON 2700 (018.270). Prerequisite: [a grade of "C" or better in ECON 1010 or ECON 1011 or the former ECON 1200 (018.120) or the former ECON 1201 (018.120)] or [a grade of "C" or better in both ECON 1210 (or ECON 1211 or the former 018.121) and ECON 1220 (or ECON 1221 or the former 018.122)].

**ECON 2460** Microeconomic Theory and Its Applications 2 Cr.Hrs.3  
(Formerly 018.246) Theories of factor markets and distribution, general equilibrium, welfare economics, social choice, and market failure, as well as other special topics, with attention to institutional and historical framework and with policy applications. Students may not hold credit for ECON 2460 (018.246) and any of: ECON 2461 (018.246) or ECON 3700 (018.370). Prerequisite: a grade of "C" or better in one of: ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

**ECON 2470** Macroeconomic Theory and Its Applications 1 Cr.Hrs.3  
(Formerly 018.247) A study of the fluctuations in national income, output, employment, money and prices, and of stabilization policy, within the framework of standard macroeconomic models of a closed economy, with attention to institutional and historical framework. Students may not hold credit for ECON 2470 (018.247) and any of: ECON 2471 (018.247) or ECON 2800 (018.280). Prerequisite: [a grade of "C" or better in ECON 1020 or ECON 1021 or the former ECON 1200 (018.120) or the former ECON 1201 (018.120)] or [a grade of "C" or better in both ECON 1210 (or ECON 1211 or the former 018.121) and ECON 1220 (or ECON 1221 or the former 018.122)].

**ECON 2480** Macroeconomic Theory and Its Applications 2 Cr.Hrs.3  
(Formerly 018.248) Theories of national income, employment, inflation, balance of payments, stabilization policy and economic growth within the framework of macroeconomic models of an open economy and with attention to institutional and historical framework. Students may not hold credit for ECON 2480 (018.248) and any of: ECON 2481 (018.248) or ECON 3800 (018.380). Prerequisite: a grade of "C" or better in one of: ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2800 (018.280).

**ECON 2490** Economic Accounting Cr.Hrs.3  
(Formerly 018.249) Examination of accounting concepts and relationships underlying stock and flow accounts at the household, firm, government and national levels; reconciliation of stock and flow accounts at these levels. Prerequisite: a grade of "C" or better in six credit hours of 1000 level Economics.

**ECON 2510** The Economy of Ukraine Cr.Hrs.3  
(Formerly 018.251) A study of the Ukrainian economy in



Eastern Europe: socioeconomic history, state and structure of the Ukrainian economy within the former Soviet Union, prospects and problems of economic restructuring. Prerequisite: none.

**ECON 2520** Economics of Sports and Leisure Cr.Hrs.3 (Formerly 018.252) Economic analysis of current issues in professional and amateur sports, and leisure. Prerequisite: none.

**ECON 2530** Introduction to Mathematical Economics Cr.Hrs.3 (Formerly 018.253) Introduction to mathematical methods used in economic analysis, including comparative-static analysis and optimization. Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Economics] and [a grade of "C" or better in MATH 1500 (136.150) or MATH 1520 (136.152)].

**ECON 2540** Political Economy 1: Production and Distribution Cr.Hrs.3 (Formerly 018.254) A study of the theories, institutions, policies and relations of power in national and global economic society with reference to the production of market and non-market goods and services and the distribution of necessary and surplus output. Particular attention will be given to the role of the state in the regulation of markets and the distribution of surplus. Prerequisite: a grade of "C" or better in six credit hours of 1000 level Economics.

**ECON 2550** Political Economy 2: Economic Growth and Fluctuations in a Global Economic Environment Cr.Hrs.3 (Formerly 018.255) A study of the theories, institutions, policies and relations of power in national and global economic society with reference to economic growth, international trade and finance, economic fluctuations, inflation and unemployment. Particular attention will be given to the role of the state in the regulations of macroeconomic activity. Prerequisite: a grade of "C" or better in ECON 2540 (018.254).

**ECON 2580** Economics of the European Union Cr.Hrs.3 (Formerly 018.258) A brief overview of the history of European unification from the Second World War to the Economic and Monetary Union. Performance and policies in the areas of labour markets, social welfare and cohesion, agriculture, environment, competition, public finance, monetary integration, and trade relations with non-Members. Students may not hold credit for ECON 2580 (018.258) and ECON 2610 (018.261) when titled "European Union." Prerequisite: none.

**ECON 2610** Special Topics in Economics Cr.Hrs.3 (Formerly 018.261) This course will vary from year to year depending on the needs of students and the interests and availability of instructors. Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Economics] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**ECON 2620** Special Topics in Economics Cr.Hrs.6 (Formerly 018.262) This course will vary from year to year depending on the needs of students and the interests and availability of instructors. Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Economics] or written consent of instructor. As the course content will vary from

year to year, students may take this course more than once for credit.

**ECON 2630** An Introduction to the World's Economies Cr.Hrs.6 (Formerly 018.263) An examination of the world's economies from a broad-based economics perspective (including economic theories, institutional perspectives and historical evidence) to explain the development and limits of the world's changing and differing economies, and economic growth patterns in the light of the private business sector, labour relations and the role of the state. Students may not hold credit for both ECON 2630 (018.263) and ECON 2620 (018.262) Special Topics in Economics when titled Introduction to the World's Economies. Prerequisite: a grade of "C" or better in six credit hours of 1000 level Economics.

**ECON 2700** Microeconomic Analysis 1 Cr.Hrs.3 (Formerly 018.270) An introduction to the principles and techniques of microeconomic analysis including consumer theory, income and substitution effects, production, cost, and general equilibrium. Students may not hold credit for ECON 2700 (018.270) and any of: ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2460 (018.246) or ECON 2461 (018.246). Prerequisite: written consent of department head.

**ECON 2800** Macroeconomic Analysis 1 Cr.Hrs.3 (Formerly 018.280) An introduction to the study of fluctuations in national income, employment and prices, and of stabilization policy in open and closed economies. Students may not hold credit for ECON 2800 (018.280) and any of: ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2480 (018.248) or ECON 2481 (018.248). Prerequisite: written consent of department head.

## 8.9.7 Economics Course Descriptions-3000 Level

**ECON 3170** Introduction to Quantitative Methods in Economics Cr.Hrs.3 (Formerly 018.317) Quantification of economic models; organization and presentation of economic data; probability; statistical estimation and testing of hypotheses with economic applications; simple regression. Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Economics] or written consent of instructor.

**ECON 3180** Introduction to Econometrics Cr.Hrs.3 (Formerly 018.318) The application of statistical tools, especially regression analysis for estimating economic relationship and testing economic hypotheses. Also offered as ABIZ 3080 by Agricultural Economics. May not be held with ABIZ 3080 (061.308). Prerequisite: [a grade of "C" or better in ECON 3170 (018.317)] or [a grade of "C" or better in each of STAT 2000 (005.200) and six credit hours of 1000 level economics].

**ECON 3300** Canadian Economic History Cr.Hrs.6 (Formerly 018.330) A study of Canada's economic growth with emphasis on the influence of Europe and the United States. Students may not hold credit for both ECON 3300 (018.330) and ECON 3301 (018.330). Prerequisite: none.

**ECON 3362** Labour Economics 1 Cr.Hrs.3 An introduction to labour economics, including labour supply, labour demand and the determination of wages and



employment. Students may not hold credit for both ECON 3362 and the former ECON 3360 (018.336). Prerequisite: a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

**ECON 3364** Labour Economics 2 Cr.Hrs.3

Analysis of topics in labour economics such as unemployment, immigration, gender discrimination and the impact of unions. Students may not hold credit for both ECON 3364 and the former ECON 3360 (018.366). Prerequisite: a grade of "C" or better in ECON 3362.

**ECON 3374** Public Expenditure Analysis and Policy Evaluation Cr.Hrs.3

The study of the role of government in the economy, government budget and expenditure evaluation issues, benefit-cost analysis, as well as government intervention regulation, public pricing, and ownership issues. Students may not hold credit for both ECON 3374 and the former ECON 3370 (018.337). Prerequisite: a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

**ECON 3376** Taxation, Tax Policy and Inter-government Public Finance Issues Cr.Hrs.3

A study of the principles of taxation, tax policy in Canada and elsewhere, government deficit and debt issues and fiscal federalism with emphasis on inter-governmental finance issues. Students may not hold credit for both ECON 3376 and the former ECON 3370 (018.337). Prerequisite: a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

**ECON 3392** An Introduction to Development Economics Cr.Hrs.3

The definition and major challenges of development and an introduction to theories of growth and development. Students may not hold credit for both ECON 3392 and the former ECON 3390 (018.339). Prerequisite: [a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270)] and [a grade of "C" or better in ECON 2470 or ECON 2471 (018.247) or ECON 2800 (018.280)] or written consent of instructor.

**ECON 3394** Development Economics: Problems and Policies Cr.Hrs.3

Processes and problems of development policies to accelerate change. Economic relations between developed and developing regions. Students may not hold credit for both ECON 3394 and the former ECON 3390 (018.339). Prerequisite: [a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270)] and [a grade of "C" or better in ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2800 (018.280)] and [a grade of "C" or better in ECON 3392 or ECON 2630 (018.263)] or written consent of instructor.

**ECON 3510** Industrial Relations Cr.Hrs.6

(Formerly 018.351) A study of comparative employer-employee relationships in Canada and other selected countries as affected by market forces, social traditions, and government action. Students may not hold credit for both ECON 3510 (018.351) and LABR 3510 (153.351). Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Economics] or [a grade of "C" or better in both LABR 1260 (the former LABR 1270 or 153.127) and LABR

1290 (153.129)].

**ECON 3610** Special Studies Cr.Hrs.3

(Formerly 018.361) This reading course will vary from year to year depending on the needs of students and the interests of instructors. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**ECON 3620** Special Studies Cr.Hrs.6

(Formerly 018.362) This reading course will vary from year to year depending on the needs of students and the interests of instructors. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**ECON 3640** Economics of the Financial System Cr.Hrs.3

(Formerly 018.364) Flows of funds through the financial system; savings and investment and asset choices of households and firms; intermediation by financial institutions; arbitrage between and within countries, government financial policy, with special reference to Canada. Students may not hold credit for ECON 3640 (018.364) and any of: ECON 3641 (018.364) or FIN 3460 (009.346). Prerequisite: a grade of "C" or better in one of: ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2460 (018.246) or ECON 2461 (018.246) or ECON 2700 (018.270) or ECON 3700 (018.370).

**ECON 3650** Monetary Macroeconomics and Policy Cr.Hrs.3

(Formerly 018.365) Demand for and supply of money; term structure of interest rates; tools of central banking; design and conduct of monetary policy. Students may not hold credit for both ECON 3650 (018.365) and ECON 3651 (018.365). Prerequisite: a grade of "C" or better in one of: ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2480 (018.248) or ECON 2481 (018.248) or ECON 2800 (018.280) or ECON 3800 (018.380).

**ECON 3670** International Trade Cr.Hrs.3

(Formerly 018.367) A study of the theory of international trade and modern trade issues including the effect of economic integration on growth, distribution, national policy and the environment. Prerequisite: a grade of "C" or better in one of: ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270). ECON 2460 (018.246) or ECON 2461 (018.246) is recommended.

**ECON 3680** International Finance Cr.Hrs.3

(Formerly 018.368) A study of the theory of international financial markets and issues in open economy macroeconomics focusing on the balance of payments, exchange rates and the effects of international financial integration on national economies. Prerequisite: a grade of "C" or better in one of: ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2800 (018.280). ECON 2480 (018.248) or ECON 2481 (018.248) is recommended.

**ECON 3690** Economic Issues of Health Policy Cr.Hrs.3

(Formerly 018.369) The structure, functioning and financing of the Canadian health care delivery system and the demand for health care in Canada. Prerequisite: a grade of "C" or better in six credit hours of 1000 level Economics.

**ECON 3700** Microeconomic Analysis 2 Cr.Hrs.3

(Formerly 018.370) An intensive study of the principles and techniques of microeconomic analysis including consumer



theory, theory of the firm, market structures, factor markets and externalities. Students may not hold credit for ECON 3700 (018.370) and any of: ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2460 (018.246) or ECON 2461 (018.246). Prerequisite: written consent of department head.

**ECON 3710** Sustainable Development: Issues and Policy Cr.Hrs.3

(Formerly 018.371) An examination of the theory and practice of economic sustainability, ecological sustainability, and social sustainability, with emphasis on analysing current issues and designing policies to achieve sustainable development. Prerequisite: a grade of "C" or better in six credit hours of 1000 level Economics.

**ECON 3720** Urban and Regional Economics and Policies Cr.Hrs.3

(Formerly 018.372) An introduction to the study of the determinants of the spatial distribution of economic activity among urban centres and regions. Particular attention will be paid to such contemporary Canadian problems as regional disparities, urban and environmental decay, and urban renewal, and the policy issues involved in dealing with these problems. Prerequisite: a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

**ECON 3730** Topics in Mathematical Economics Cr.Hrs.3

(Formerly 018.373) Mathematical methods used in economic analysis. Topics will vary from year to year depending on the interests of instructors and students. Prerequisite: [a grade of "C" or better in ECON 2530 (018.253)] or written consent of instructor.

**ECON 3742** Industrial Organization and Firm Strategy Cr.Hrs.3

Market structure and firms' strategic decisions will be analyzed. Topics may cover monopoly pricing strategies such as price discrimination; non-pricing strategies such as advertising, quality decisions and differentiated products; dynamic oligopoly models; mergers; anti-competitive behaviour; and auctions. This course assumes students have a sound background in economic theory, as well as single-variable calculus and basic statistics. Students may not hold credit for both ECON 3742 and the former ECON 3740 (018.374). Prerequisite: [a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270)] or consent of the instructor.

**ECON 3800** Macroeconomic Analysis 2 Cr.Hrs.3

(Formerly 018.380) An intensive study of the mainstream approaches to explaining output and inflation, including their mathematical structure and empirical implications. Students may not hold credit for ECON 3800 (018.380) and any of: ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2480 (018.248) or ECON 2481 (018.248). Prerequisite: written consent of department head.

**ECON 3810** Alternative Approaches to Macroeconomic Analysis Cr.Hrs.3

(Formerly 018.381) A survey of Post-Keynesian, Cambridge, Marxian, and institutionalist approaches to macroeconomic fluctuations, contrasting their theoretical and policy frameworks with those of mainstream macroeconomics. Prerequisite: written consent of department head.

## 8.9.7 Economics Course Descriptions-4000 Level

**ECON 4120** Intermediate Econometrics Cr.Hrs.3

(Formerly 018.412) A course in applied econometrics that explores the regression model and how it may be used to test economic theory. Special emphasis is placed on violations of the assumptions of least squares, specification error, and applying the model to production, forecasting and economic theory. This course assumes students have had a sound background in economic theory (i.e. micro and macro), as well as single-variable calculus, linear algebra and basic statistics. Also offered as ABIZ 4120 by Agricultural Economics. May not hold be held with ABIZ 4120 (061.412). Prerequisite: written consent of department head.

**ECON 4130** Seminar in Econometrics Cr.Hrs.3

(Formerly 018.413) This course explores econometrics to estimate limited dependent variable models, dynamic economic relationships, time series, and feedback processes that use simultaneous equation systems. The emphasis is on applying econometrics to a range of problems in micro- and macroeconomics. Prerequisite: [a grade of "C" or better in ECON 4120 (018.412)] and written consent of department head.

**ECON 4140** Evaluation of Economic Policy and Programs Cr.Hrs.3

This is a course in applied micro-economic policy analysis using the techniques of cost-benefit analysis as its foundation. Students will learn the welfare foundations of cost-benefit analysis, techniques for decision-making under conditions of risk and uncertainty, and how these techniques may be applied to public policy. The course will include examples from all areas of public policy, including health, education, social services criminal justice, etc. Prerequisite: written consent of department head.

**ECON 4410** History of Economic Thought Cr.Hrs.6

(Formerly 018.441) The history of economic theory; the evolution of its main concepts, the people who developed them, and the environment in which they worked. Prerequisite: written consent of department head.

**ECON 4430** Theories of Economic Development Cr.Hrs.6

(Formerly 018.443) A study of theories, problems, and policies of economic growth and development both for advanced and underdeveloped countries. Prerequisite: written consent of department head. ECON 2800 (018.280) and ECON 3800 (018.380) are/is recommended but not required.

**ECON 4470** Natural Resource Economics Cr.Hrs.6

(Formerly 018.447) The application of economic theory to the study of natural resource development and resource problems. Emphasis is on the implications for resource management and policy. Prerequisite: written consent of department head.

**ECON 4480** Game Theory Cr.Hrs.3

The course will analyze the strategic interaction between firms in oligopolistic markets, between agents in common resource settings, and between government and its citizens. Market failure arising from asymmetric information and externalities will be examined. Negotiation and bargaining



between agents will also be examined. Prerequisite: [a grade of "B" or better in ECON 2530 (018.253) or MATH 1500 (136.150) or MATH 1510 (136.151) or MATH 1520 (136.152) or MATH 1690 (136.169)] or written consent of instructor.

#### **ECON 4490** Special Studies Cr.Hrs.3

(Formerly 018.449) This readings course will vary from year to year depending on the needs of students and the interests of instructors. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

#### **ECON 4500** Special Studies Cr.Hrs.6

(Formerly 018.450) This readings course will vary from year to year depending on the needs of students and interests of instructors. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

#### **ECON 4710** Topics in Microeconomics of Uncertainty and Optimization Over Time Cr.Hrs.3

(Formerly 018.471) An introduction to the study of microeconomic theories and models dealing with problems of uncertainty, incomplete and asymmetric information, strategic behaviour, interest, capital theory and optimization over time. Prerequisite: written consent of department head.

#### **ECON 4820** Workshop on Canadian Economic Policy Cr.Hrs.6

(Formerly 018.482) In depth examination of policy issues on selected topics such as unemployment, inflation, international trade, transfer payments, health care, the environment. A major research paper will be expected of all students. Students may not hold credit for both ECON 4820 (018.482) and ECON 4830 (018.483). Prerequisite: [formal declaration of an Advanced Major in Economics or Honours Economics program] and [a grade of "C" or better in each of ECON 3170 (018.317) and ECON 3180 (018.318)] and [a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270)] and [a grade of "C" or better in ECON 2460 (018.246) or ECON 2461 (018.246) or ECON 3700 (018.370)] and [a grade of "C" or better in ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2800 (018.280)] and [a grade of "C" or better in ECON 2480 (018.248) or ECON 2481 (018.248) or ECON 3800 (018.380)].

#### **ECON 4830** Economics Field Placement Cr.Hrs.6

(Formerly 018.483) An educationally directed field experience in an economics-related area. Options include government, non-governmental agency, private industry, community-based projects. Students will work under supervision on a non-paid basis for the equivalent of one day per week and will write an essay based on this experience, relating theory and practice. Students may not hold credit for both ECON 4830 (018.483) and ECON 4820 (018.482). Prerequisite: [formal declaration of an Advanced Major in Economics or Honours Economics program] and [a grade of "C" or better in each of ECON 3170 (018.317) and ECON 3180 (018.318)] and [a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270)] and [a grade of "C" or better in ECON 2460 (018.246) or ECON 2461 (018.246) or ECON 3700 (018.370)] and [a grade of "C" or better in ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2800 (018.280)] and [a grade of "C" or better in ECON 2480 (018.248) or ECON 2481 (018.248) or ECON 3800 (018.380)].

(018.380)].

## 8.10 English, Film, and Theatre

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### 8.10.1 English Program Information,

English literature connects us in vital ways to times, places, and cultures, including our own; engages us in important moral and social questions; encourages us to reflect upon the capacities of the human mind and imagination; invites us to probe connections between language, form, structure, and meaning; and entertains, surprises, shocks, and moves us. Through its offerings of courses in contemporary and historical literature and in creative writing, our program promotes the study of English from this wide range of perspectives.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in ENGL 1200 or ENGL 1300 (or the former 004.126) or both ENGL 1310 and ENGL 1340. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate, including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in ENGL 1200 or ENGL 1300 (or the former 004.126) or both ENGL 1310 and ENGL 1340.

### Honours Program

For entry to the Honours program see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#) A grade of "B" or better is required in ENGL 1200 or ENGL 1300 (or the former 004.126) or in both ENGL 1310 and ENGL 1340; ENGL 1200 is strongly recommended. Students may also be admitted to Honours in English in the third year of undergraduate study, in consultation with the department. Honours students must have their programs approved by the department each year. Normally, to continue in the Honours



program, a minimum grade of “B” must be obtained in all English courses.

Honours courses are also open to students who have been accepted into the pre-M.A. program and to students who have obtained the written consent of the department head.

Honours students who revert to a General program in English must meet the literature prior to the 1900 requirement for a Major or Minor, and they should consult the department head before continuing.

Students taking Single Honours should, if possible, take at least 12 credit hours in one of the following languages: French, German, Greek, Icelandic, Italian, Latin, Russian, Spanish.

**Notes**

ENGL 0930, ENGL 0940, ENGL 1061 and ENGL 1071 are not designed to teach English as a second language.

For students who need help with basic writing skills, the Department of English, Film, and Theatre offers two half courses: ENGL 0930 English Composition and ENGL 0940 Writing About Literature. These courses are limited in size. Both ENGL 0930 and ENGL 0940 are acceptable for credit towards a degree in Arts or Science, but they may not be counted for credit in the 48 hours for a Major (Advanced), the 30 hours for a Major (General), or the 18 hours for a Minor (Concentration). Either or both will, however, be included in the total number of hours a student is allowed to take in the combined Major and Minor. There is no prerequisite for entry into ENGL 0930 or ENGL 0940, and these courses are not required for admission to subsequent English courses.

**Study Resources**

All students taking English should own a writing handbook and a good dictionary such as Webster’s *New Collegiate*, Funk and Wagnall’s *Standard College*, *The Concise Oxford*, *The Gage Canadian*, or *The New World*. Students will also find useful *The MLA Handbook* and M.H. Abrams, *A Glossary of Literary Terms*.

**8.10.2 English,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR</b> <sup>1,2,4</sup> TOTAL: 30 CREDIT HOURS			
ENGL 1200 or ENGL 1300 (or the former 004.126) or both ENGL 1310 and ENGL 1340	24 credit hours in general courses at the 2000 level and above to include at least 9 credit hours of literature prior to 1900 <sup>4</sup> [of the credit hours listed above, at least 6 credit hours must be at the 3000 level].		
<b>ADVANCED MAJOR</b> <sup>1,2,4</sup> TOTAL: 48 CREDIT HOURS			
ENGL 1200 or ENGL 1300 (or the former 004.126) or both ENGL 1310 and ENGL 1340	42 credit hours in general courses <sup>3</sup> at the 2000 level and above to include at least 15 credit hours of literature prior to 1900 <sup>4</sup> [of the credit hours listed above, at least 9 credit hours must be at the 3000 level].		
<b>MINOR (CONCENTRATION)</b> <sup>2,4</sup> TOTAL: 18 CREDIT HOURS			
ENGL 1200 or ENGL 1300 (or the former 004.126) or both ENGL 1310 and ENGL 1340	12 credit hours in general courses at the 2000 level and above to include at least 6 credit hours of literature prior to 1900 [of the credit hours listed above, at least 3 credit hours must be at the 3000 level]. Students may not offer literature in translation courses <sup>4</sup> to satisfy the requirements of the Minor (Concentration).		
<b>HONOURS SINGLE</b> <sup>4,5,7,8</sup>			
ENGL 1200 or ENGL 1300 (or the former 004.126) or both ENGL 1310 and ENGL 1340	<ul style="list-style-type: none"> <li>• ENGL 2640 (in Year 2)</li> <li>• 24 credit hours of literature prior to 1900<sup>4</sup>, of which 12 credit hours is to be in literature prior to 1700 selected from the following English courses: ENGL 2070, ENGL 2080, ENGL 2090, ENGL 3000, ENGL 3010, ENGL 3020, ENGL 3030, ENGL 3050, ENGL 3080, ENGL 3090, ENGL 3180<sup>6</sup></li> <li>• 6 credit hours in Canadian literature, selected from the following English courses: ENGL 2270, ENGL 3270<sup>6</sup></li> <li>• 12 credit hours in other literature after 1900, selected from the following English courses: ENGL 2160, ENGL 2180, ENGL 2830, ENGL 2840, ENGL 3980, ENGL 3990<sup>6</sup></li> <li>• 9 credit hours in other English courses at the 2000 level and above [of the credit hours listed</li> </ul>		



	<p>above, at least 9 credit hours must be at the 3000 level].</p> <ul style="list-style-type: none"> <li>• 9 credit hours in Honours courses (4000 level) in Years 3 and 4. Honours courses that are double-numbered with a graduate course will be limited to fourth-year Honours students.</li> <li>• 24 credit hours in ancillary options</li> </ul>
<b>HONOURS DOUBLE</b> <sup>2, 4, 7, 8</sup>	
ENGL 1200 or ENGL 1300 (or the former 004.126) or both ENGL 1310 and ENGL 1340	<ul style="list-style-type: none"> <li>• ENGL 2640 (in Year 2)</li> <li>• 18 credit hours of literature prior to 1900<sup>4</sup></li> <li>• 6 credit hours in other English courses at the 2000 level and above [of the credit hours listed above, at least 6 credit hours must be at the 3000 level].</li> <li>• 6 credit hours in Honours courses (4000 level). Honours courses that are double-numbered with a graduate course will be limited to fourth-year Honours students.</li> <li>• 36 credit hours in second honours field</li> <li>• 6 credit hours in ancillary options</li> </ul>
<b>NOTES:</b>	
<p><sup>1</sup> Students may offer up to 6 credit hours in Film Studies courses, with the exception of FILM 1290 and FILM 1310 (or the former FILM 1300), toward both the 3-year and the 4-year Major in English. Any Film Studies course so applied may not also be offered toward a Minor (Concentration) in Film Studies.</p> <p><sup>2</sup> Film Studies course FILM 2280 may be used as an English course to satisfy the English course requirements. If it is used as such, it may not also be applied to a Minor (Concentration) in Film Studies or as an ancillary option in Honours.</p> <p><sup>3</sup> Credit in ENGL 2000 may be offered toward the 48 hours in general courses required for a Major (Advanced).</p> <p><sup>4</sup> Students may offer up to 6 credit hours of literature in translation courses (ENGL 2490, CLAS 2612, CLAS 2622, ICEL 3320, ICEL 3330) to satisfy requirements for a General Major, Advanced Major, Single Honours or Double Honours. Students may offer up to 3 credit hours of literature in translation courses to satisfy the "literature prior to 1900" requirement for a General Major, Advanced Major, Single Honours or Double Honours. Students may not offer literature in translation courses to satisfy the requirements for a Minor (Concentration).</p> <p><sup>5</sup> Film and Theatre courses, other than Introductory (1000 level), may be used for credit towards an Honours program (Single).</p> <p><sup>6</sup> Certain courses that vary in content from year to year, such as Honours courses and Special Topics courses, may also satisfy this requirement, as determined by the Department.</p> <p><sup>7</sup> Ancillary options are courses taken from outside the Honours field of study.</p> <p><sup>8</sup> Honours courses: all 4000 level courses.</p>	

**Literature Prior to 1900**

Students declaring a four-year Advanced Major in English must take at least 15 credit hours from the courses listed below. Students declaring a three-year General Major in English must take at least 9 credit hours from the list. Students declaring a Minor (Concentration) in English must take at least 6 credit hours from the list. Courses chosen from this list will be deemed to satisfy the previous "Special List" requirement for students in progress towards a degree with previously declared Majors or Minors (Concentrations) in English. [NOTE: From year to year, other courses may meet this requirement. Please refer to the on-line course timetable for additional information on these courses.]



Course	Credit Hours
English	
ENGL 2070 Literature of the Sixteenth Century	6
ENGL 2080 Medieval Literature	6
ENGL 2090 Literature of the Seventeenth Century	6
ENGL 2120 Literature of the Restoration and Eighteenth Century	6
ENGL 2130 Literature of the Romantic Period	6
ENGL 2140 Literature of the Victorian Period	6
ENGL 2170 American Literature to 1900	6
ENGL 3000 Chaucer	6
ENGL 3010 Shakespeare	6
ENGL 3020 Milton	6
ENGL 3030 Studies in Sixteenth-Century Literature	3
ENGL 3050 Studies in Old English	6
ENGL 3080 Studies in Medieval Literature	3
ENGL 3090 Studies in Seventeenth-Century Literature	3
ENGL 3120 Studies in Restoration and Eighteenth-Century Literature	3
ENGL 3130 Studies in the Romantics	3
ENGL 3140 Studies in the Victorians	3
ENGL 3180 Studies in Renaissance Literature	3
NOTE: Restrictions apply to the following courses regarding their use for credit in English (ENGL 2490) and for fulfillment of the literature prior to 1900 requirement. See program note 4. Contact the department for further information on restrictions.	
Classics (Classical Studies)	
CLAS 2612 Greek Literature in Translation (taught with ENGL 2490)	3
CLAS 2622 Latin Literature in Translation (taught with ENGL 2490)	3
CLAS 3610* Greek Literature in Translation (taught with ENGL 2490)	3
CLAS 3620* Latin Literature in Translation (taught with ENGL 2490)	3
Icelandic	
ICEL 3320 Old Norse Mythology (taught with ENGL 2490)	3
ICEL 3330 Icelandic Sagas in Translation (taught with ENGL 2490)	3

\* Indicates course no longer offered.

### 8.10.3 English Course Descriptions-0 Level

**ENGL 0930** English Composition Cr.Hrs.3  
(Formerly 004.093) Designed to help students write better essays. Course focuses on effective expression; sentence, paragraph, and essay construction; and the writing process. A great deal of writing is required; instructors address the particular needs of individual students. Students may not enter English courses numbered above the 1000 level directly from this course. This course is not designed to teach English as a second language. This course does not satisfy the Humanities requirement.

**ENGL 0940** Writing About Literature Cr.Hrs.3  
(Formerly 004.094) Designed to supplement and to complement ENGL 0930 (004.093), the course may be taken by itself. The course focuses on writing about literature through the study of the short story and poetry. Students may not normally enter English courses numbered above the 1000 level directly from this course. This course is not designed to teach English as a second language. This course does not satisfy the Humanities requirement.

### 8.10.3 English Course Descriptions-1000 Level

**ENGL 1200** Representative Literary Works Cr.Hrs.6  
(Formerly 004.120) An introduction to the study of literature, with emphasis on the development of reading and writing skills. Poetry, prose and drama from various historical periods. Texts for each section will be announced. Students may not hold credit for both ENGL 1200 (004.120) and ENGL 1201 (004.120). English 40S or the former English 300 are strongly recommended, but English 40G or the former 301 or 305 will also be accepted.

**ENGL 1300** Literature since 1900 Cr.Hrs.6  
(Formerly 004.130) An introduction to the study of literature, with emphasis on the development of reading and writing skills. Poetry, prose and drama from Canada, Britain, the United States and other countries. Texts for each section will be announced. Students may not hold credit for both ENGL 1300 (004.130) and ENGL 1301 (004.130). English 40S or the former English 300 are strongly recommended, but English 40G or the former 301 or 305 will also be accepted.



**ENGL 1310** Literary Topics 1 Cr.Hrs.3  
(Formerly 004.131) Topics relating to literature and culture will vary yearly. See the Class Schedule for a list of current topics. English 40S or the former English 300 are strongly recommended, but English 40G or the former 301 or 305 will also be accepted. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 1340** Introduction to Literary Analysis Cr.Hrs.3  
(Formerly 004.134) This course is intended to prepare students who have completed ENGL 1310 (004.131) for further study in English. It will provide them with the additional reading and writing skills and experience required for successful study in upper-level courses. Prerequisite: a grade of "C" or better in ENGL 1310 (004.131).

### 8.10.3 English Course Descriptions-2000

#### Level

**ENGL 2000** Intermediate Writing and Research Cr.Hrs.6  
(Formerly 004.200) Designed to teach students how to read, write, and research at the university level, this course stresses effective expository writing, prose reading, and research skills. There is no prerequisite for this course. NOTE: Credit in ENGL 2000 (004.200) is acceptable toward a degree in Arts or Science, but does not satisfy the humanities requirement in the Faculty of Arts. It may not be offered for credit in the 30 hours for a Major (General) or the 18 hours for a Minor but may be offered for credit in the 48 hours for the Major (Advanced).

**ENGL 2070** Literature of the Sixteenth Century Cr.Hrs.6  
(Formerly 004.207) A survey of poetry, prose and drama by major and minor writers in historical context. Students may not hold credit for both ENGL 2070 (004.207) and ENGL 2071 (004.207). Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2080** Medieval Literature Cr.Hrs.6  
(Formerly 004.208) A survey of poetry, prose and drama by major and minor writers in historical context. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2090** Literature of the Seventeenth Century Cr.Hrs.6  
(Formerly 004.209) A survey of poetry, prose and drama by major and minor writers in historical context. Students may not hold credit for both ENGL 2090 (004.209) and ENGL 2091 (004.209). Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2120** Literature of the Restoration and Eighteenth Century Cr.Hrs.6  
(Formerly 004.212) A survey of poetry, prose and drama by major and minor writers in historical context. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

(004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2130** Literature of the Romantic Period Cr.Hrs.6  
(Formerly 004.213) A survey of poetry, prose and drama by major and minor writers in historical context. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2140** Literature of the Victorian Period Cr.Hrs.6  
(Formerly 004.214) A survey of poetry, prose and drama by major and minor writers in historical context. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2160** British Literature since 1900 Cr.Hrs.6  
(Formerly 004.216) A survey of poetry, prose and drama by major and minor writers in historical context. Students may not hold credit for both ENGL 2160 (004.216) and ENGL 2161 (004.216). Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2170** American Literature to 1900 Cr.Hrs.6  
(Formerly 004.217) A survey of poetry, prose and drama by major and minor writers in historical context. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2180** American Literature since 1900 Cr.Hrs.6  
(Formerly 004.218) A survey of poetry, prose and drama by major and minor writers in historical context. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2190** Special Topics Cr.Hrs.3  
(Formerly 004.219) Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)]. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 2270** Canadian Literature Cr.Hrs.6  
(Formerly 004.227) A survey of poetry, prose and drama by major and minor writers in historical context. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2490** Literature in Translation Cr.Hrs.3  
(Formerly 004.249) Content of this course will vary from year to year and from section to section. See the course descriptions available from the English Department. Each section of this course will be double-numbered with the department of the instructor teaching the course.



Restrictions: See note 4 in the program table under section 8.10.2 English. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)]. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 2550 Critical Practise Cr.Hrs.3**

(Formerly 004.255) An introduction to the critical idioms and methods for the analysis of literary texts. This course emphasizes the application of critical idioms and methods in the analysis of literary texts. Students may not hold credit for both ENGL 2550 (004.255) and the former ENGL 2800 (004.280). Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2570 The Novel Cr.Hrs.6**

(Formerly 004.257) A survey of the development of the novel as a genre. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2600 Writing and Gender Cr.Hrs.3**

(Formerly 004.260) The literary representation of gender, the influence of the author's gender on writing, and other issues of gender in literature. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2640 History of Critical Theory: From Plato to the Present Cr.Hrs.6**

(Formerly 004.264) A survey of critical theory, with some emphasis on application. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2760 Introductory Creative Writing Cr.Hrs.3**

(Formerly 004.276) Offers students the chance to explore the basic forms of creative writing - poetry, fiction, and drama - whether or not they have made previous formal attempts to write in these forms. A sample of the student's writing is not required for admission to this course. The format is seminar and workshop and will include, as needed, lectures on the fundamentals of creative writing. Students may not register concurrently for ENGL 2760 (004.276) or any of: ENGL 3500 (004.350) or ENGL 3790 (004.379). Not open to students who have previously obtained credit for any of ENGL 3500 (004.350) or ENGL 3790 (004.379). Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2830 Literature of Africa and/or the Caribbean Cr.Hrs.3**

(Formerly 004.283) This course will explore the literatures of Africa and the Caribbean by writers from Nigeria, South

Africa, Kenya, Zimbabwe, Grenada, Jamaica, and/or Trinidad. We will also examine the theories often associated with postcolonialism - theories of marginality, power, alterity, ethnicity, race, locality, space, the subaltern, mimicry, hybridity, nationalism, diaspora, class, migration, multiculturalism, minority discourse, resistance, and historical revisionism - in a comparative context. Accordingly, we will be reading both fictional and theoretical works. The central objective of this course is to offer an overview of some contemporary world literature written in English. Students will also be encouraged to examine the texts from a variety of complimentary literary perspectives including new historicism, feminism, and Marxism. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2900 Genre Cr.Hrs.3**

(Formerly 004.290) Selections in literature of a particular genre. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)]. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 2930 International Literature Cr.Hrs.3**

(Formerly 004.293) Literature of Canada, the United States, and/or Britain in the contexts of world literature. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2940 Short Fiction I Cr.Hrs.3**

(Formerly 004.294) Representative writers. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2960 Drama 1 Cr.Hrs.3**

(Formerly 004.296) An introduction to dramatic forms and conventions. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

**ENGL 2980 Poetry 1 Cr.Hrs.3**

(Formerly 004.298) Introduction to poetic language and forms. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)].

### 8.10.3 English Course Descriptions-3000 Level

**ENGL 3000 Chaucer Cr.Hrs.6**

(Formerly 004.300) Critical study of the works of this author, including historical context. Prerequisite: a grade of "C" or better in six hours of English at the 2000 level.



**ENGL 3010** Shakespeare Cr.Hrs.6  
(Formerly 004.301) Critical study of the works of this author, including historical context. Students may not hold credit for both ENGL 3010 (004.301) and ENGL 3011 (004.301). Prerequisite: a grade of "C" or better in six hours of English at the 2000 level.

**ENGL 3020** Milton Cr.Hrs.6  
(Formerly 004.302) Critical study of the works of this author, including historical context. Students may not hold credit for both ENGL 3020 (004.302) and the former ENGL 3021 (004.302). Prerequisite: a grade of "C" or better in six hours of English at the 2000 level.

**ENGL 3030** Studies in Sixteenth-Century Literature Cr.Hrs.3  
(Formerly 004.303) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3050** Studies in Old English Cr.Hrs.3  
(Formerly 004.305) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3080** Studies in Medieval Literature Cr.Hrs.3  
(Formerly 004.308) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3090** Studies in Seventeenth-Century Literature Cr.Hrs.3  
(Formerly 004.309) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3120** Studies in Restoration and Eighteenth-Century Literature Cr.Hrs.3  
(Formerly 004.312) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3130** Studies in the Romantics Cr.Hrs.3  
(Formerly 004.313) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre

Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3140** Studies in the Victorians Cr.Hrs.3  
(Formerly 004.314) Students may not hold credit for both ENGL 3140 (004.314) and ENGL 3141 (004.314). Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3170** Studies in American Literature Cr.Hrs.3  
(Formerly 004.317) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3180** Studies in Renaissance Literature Cr.Hrs.3  
(Formerly 004.318) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3190** Studies in Special Topics Cr.Hrs.6  
(Formerly 004.319) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3270** Studies in Canadian Literature Cr.Hrs.3  
(Formerly 004.327) Students may not hold credit for both ENGL 3270 (004.327) and ENGL 3271 (004.327). Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3500** Creative Writing Cr.Hrs.6  
(Formerly 004.350) Classroom hours will be arranged. Students may concentrate on poetry or on prose alone. Enrolment will be limited to allow for the particular interests of students. Written consent of the instructor, based on a sample of the student's work, must be obtained before registration. Samples of writing (with name, address, and telephone number) are to be submitted to the department general office not later than June 1. NOTE: Students may offer only one of ENGL 3500 (004.350) and ENGL 3790 (004.379) for credit in a Major. If both courses are taken, however, they will be included in the total number of hours that a student has in a Major.

**ENGL 3530** Special Topics in Creative Writing 1 Cr.Hrs.3  
This advanced studies course will include practical and theoretical components and will focus on a particular area of



writing craft or poetics without an emphasis on end-of-term publication or production. Possible topics include prose fiction, poetry, memoir, dramaturgy and screenwriting. Prerequisites: [a grade of "C" or better in ENGL 2760 (004.276)] and written consent of instructor, based on a sample of the student's work. Samples of writing (with name, address and telephone number) are to be submitted at the department general office at least two months prior to the start of the course. Enrolment for this course will be limited. NOTE: The content of this course will vary from year to year. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3540** Special Topics in Creative Writing 2 Cr.Hrs.6 This advanced studies course will include practical and theoretical components and will focus on a particular area of writing craft or poetics without an emphasis on end-of-term publication or production. Possible topics include prose fiction, poetry, memoir, dramaturgy and screenwriting. Prerequisites: [a grade of "C" or better in ENGL 2760 (or 004.276)] and written consent of instructor, based on a sample of the student's work. Samples of writing (with name, address and telephone number) are to be submitted at the department general office no later than June 1. Enrolment for this course will be limited. NOTE: The content of this course will vary from year to year. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3550** Studies in British Literature since 1900 Cr.Hrs.3 (Formerly 004.355) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3630** Studies in Critical Theory Cr.Hrs.3 (Formerly 004.363) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3660** Special Studies Cr.Hrs.3 (Formerly 004.366) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3670** Studies in the Novel Cr.Hrs.6 (Formerly 004.367) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. Students may not hold credit for both ENGL 3670 (004.367) and ENGL 3671 (004.367). NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3790** Advanced Creative Writing Cr.Hrs.6 (Formerly 004.379) An intensive workshop among other students at a high level of talent. The instructor will work closely with each student through individual conferences. Students will normally have taken ENGL 3500 (004.350) as a prerequisite to this course; however, standing in either does not automatically guarantee admission to ENGL 3790 (004.379). Written consent of the instructor, based on a sample of the student's work, must be obtained before registration. Samples of writing (with name, address, and telephone number) are to be submitted at the department general office no later than June 1. Students may offer only one of ENGL 3790 (004.379) and ENGL 3500 (004.350) for credit for a Major. NOTE: Students may offer only one of ENGL 3790 (004.379) and ENGL 3500 (004.350) for credit for a Major. If both courses are taken, however, they will be included in the total number of hours that a student has in the Major.

**ENGL 3800** Special Studies 1 Cr.Hrs.3 (Formerly 004.380) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3890** Studies in Writing and Gender Cr.Hrs.3 (Formerly 004.389) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3930** Studies in International Literature Cr.Hrs.6 (Formerly 004.393) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3950** Short Fiction 2 Cr.Hrs.3 (Formerly 004.395) Advanced study of selected topics. Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions.

**ENGL 3960** Drama 2 Cr.Hrs.3 (Formerly 004.396) Advanced study of selected topics. Students may not hold credit for both ENGL 3960 (004.396) and ENGL 3961 (004.396). Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions.

**ENGL 3970** Poetry 2 Cr.Hrs.3 (Formerly 004.397) Advanced study of selected topics. Prerequisite: a grade of "C" or better in six hours of English



at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions.

**ENGL 3980** Studies in Modernism Cr.Hrs.3  
(Formerly 004.398) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3990** Studies in Post-Modernism Cr.Hrs.3  
(Formerly 004.399) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed course descriptions. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.10.3 English Course Descriptions-4000 Level

**ENGL 4630** Honours Seminar 1 Cr.Hrs.3  
(Formerly 004.463) This course may vary from year to year depending on the needs and interests of instructors and students. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 4640** Honours Seminar 2 Cr.Hrs.3  
(Formerly 004.464) This course may vary from year to year depending on the needs and interests of instructors and students. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 4650** Honours Seminar 3 Cr.Hrs.3  
(Formerly 004.465) This course may vary from year to year depending on the needs and interests of instructors and students. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 4770** Honours Seminar 1 Cr.Hrs.6  
(Formerly 004.477) This course may vary from year to year depending on the needs and interests of instructors and students. Prerequisite: written consent of department head. As the course content will vary from year to year, students

may take this course more than once for credit.

### 8.10.4 Film Studies Program,

**Chair:** George Toles

**Program Office:** 364 University College

**Telephone:** 204 474 9581

**E-mail:** [filmstudies@umanitoba.ca](mailto:filmstudies@umanitoba.ca)

### 8.10.5 Film Studies Program Information,

Film is the most important popular culture art form of the twenty-first century. Our knowledge and perception of the modern world is shaped by film or its related media — video and television. Film is a social, cultural, and historical document that, in addition to being worthwhile for study as an artistic medium, also shares issues with philosophy, sociology, political studies, and other disciplines. Instructors include people who have made and written about films and who are well prepared to discuss film history, film as cultural artifact and the connections between film and other disciplines.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in both FILM 1290 and FILM 1310 (or the former FILM 1300). For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in both FILM 1290 and FILM 1310 (or the former FILM 1300).



**8.10.6 Film Studies,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
FILM 1290 and FILM 1310	24 credit hours in Film Studies courses, including FILM 3420		
<b>ADVANCED MAJOR TOTAL: 60 CREDIT HOURS</b>			
FILM 1290 and FILM 1310	<ul style="list-style-type: none"> <li>• 42 credit hours in Film Studies including FILM 3420 and an additional 6 credit hours in courses numbered at the 3000 level</li> <li>• 12 credit hours from List A and B of which at least 6 credit hours must be from List A</li> </ul>		
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
FILM 1290 and FILM 1310	12 credit hours in Film Studies courses		

**List A**

**Faculty of Arts**

**Classics**

CLAS 2612	Greek Literature in Translation	3
CLAS 2622	Latin Literature in Translation	3
CLAS 3610*	Greek Literature in Translation	3
CLAS 3620*	Latin Literature in Translation	3
CLAS 3680	Studies in a Classical Literary Genre 1	3
CLAS 3690	Studies in a Classical Literary Genre 2	3
CLAS 3700	Studies in a Classical Literary Genre 3	3

**English, Film, and Theatre**

ENGL 1200	Representative Literary Works	6
ENGL 1300	Literature since 1900	6
ENGL 2170	American Literature to 1900	6
ENGL 2180	American Literature since 1900	6
ENGL 2270	Canadian Literature	6
ENGL 2960	Drama 1	3
ENGL 3010	Shakespeare	6
ENGL 3270	Studies in Canadian Literature	3
ENGL 3500	Creative Writing	6
ENGL 3670	Studies in the Novel	6
ENGL 3790	Advanced Creative Writing	6
ENGL 3960	Drama 2	3
ENGL 3980	Studies in Modernism	3

**French, Spanish and Italian**

FREN 3500	Littérature du 17e siècle (B)	3
FREN 3580	Travail indépendant (A, B)	3

**German and Slavic Studies (German)**

GRMN 2370*	Modern German Literature in Translation	6
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**German and Slavic Studies (Polish)**

POL 2320*	An Outline of Polish Literature	6
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**German and Slavic Studies (Ukrainian)**

UKRN 2420*	Ukrainian Canadian Literature	3
UKRN 3660*	Ukrainian Literature in the West	3
UKRN 3670*	Contemporary Ukrainian Literature	3

**Judaic Studies**

HEB 2210	Modern Hebrew Literature	6
SEM 2210*	Modern Hebrew Literature	6

**List B**

**Faculty of Arts**

**English, Film, and Theatre**

THTR 1220	Introduction to Theatre	6
THTR 2150	Theatrical Techniques: Onstage	6
THTR 2470	Fundamentals of Dramatic Analysis	3
THTR 2480	Theatre History	3
THTR 3460	Theory of Drama and Performance	3
THTR 3470	Text and Performance	3

**School of Art**



FAAH 1030	Introduction to Art 1A	3
FAAH 1040	Introduction to Art 2A	3
FAAH 1050	Introduction to Art 1B	3
FAAH 1060	Introduction to Art 2B	3

\*Indicates course no longer offered.

### 8.10.7 Film Studies Course Descriptions- 1000 Level

**FILM 1290** The Art of the Film 1 Cr.Hrs.3  
(Formerly 152.129) The study of film as an art form, entertainment and document.

**FILM 1310** Film History Cr.Hrs.3  
In this course students will examine films from more than one period in film history, exploring the relationships among and between films in terms of genre, style, theme, structure, and other aesthetic elements. Students will study films selected from various periods of world cinema, taking into consideration how and in what ways films bear the traces of their time and place, or are affiliated with relevant movements in art, history, or society, or have been shaped by technical and artistic developments in the art of film. Students may not hold credit for FILM 1310 and the former FILM 1300 (152.130). Prerequisite: [a grade of "C" or better in FILM 1290 (152.129)] or written consent of instructor.

### 8.10.7 Film Studies Course Descriptions- 2000 Level

**FILM 2280** Film and Literature Cr.Hrs.6  
(Formerly 152.228) The interrelationships between literature and film through an analysis of significant films, novels, poems and plays. Special attention to adaptations of Shakespeare, modern drama, the 19th century novel, the modern novel, and popular fiction. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor.

**FILM 2300** The Popular Film Cr.Hrs.3  
(Formerly 152.230) Current trends in film as a form of culture. Emphasis on recently released films as mirrors of existing social myths and values. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor.

**FILM 2330** Film and Contemporary Thought Cr.Hrs.3  
(Formerly 152.233) Recent films viewed in the light of current intellectual developments. Screenings are complemented by readings in contemporary political theory, philosophy, art, psychology, critical theory, etc. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor.

**FILM 2370** Experimental Cinema Cr.Hrs.3  
(Formerly 152.237) Formal innovations in avant-garde and underground films and videos, their significance and influence on the feature film industry.

**FILM 2380** The International Cinema 1 Cr.Hrs.3  
(Formerly 152.238) An examination of major works of international cinema, focusing upon the contributions of individual countries, or relevant global issues. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**FILM 2390** The International Cinema 2 Cr.Hrs.3  
(Formerly 152.239) An examination of major works of international cinema, focusing upon the contributions of individual countries, or relevant global issues. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**FILM 2400** The American Film to 1950 Cr.Hrs.3  
(Formerly 152.240) The aesthetic development of the American Film from the early days until the beginning of television. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor.

**FILM 2410** The American Film from 1950 Cr.Hrs.3  
(Formerly 152.241) An examination of the Hollywood film from the decline of the studio system. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor.

**FILM 2420** Realism and Film Cr.Hrs.3  
(Formerly 152.242) Theories and forms of the non-fiction film as an art form, an information carrier and a propaganda tool.

**FILM 2430** The Canadian Film Cr.Hrs.3  
(Formerly 152.243) The development of the film industry in Canada in its varied forms, with emphasis upon key films, regional differences and Manitoba contributions.

**FILM 2460** Film Genres Cr.Hrs.3  
(Formerly 152.246) An examination of a major cinematic genre (e.g. the gangster film, the western, the musical) with emphasis upon the permanence and evolution of generic conventions and the ability of filmmakers to register personal visions within these conventions. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.10.7 Film Studies -3000 Level

**FILM 3250** Special Topics in Film 1 Cr.Hrs.3  
(Formerly 152.325) An intensive examination of selected topics in film. Contents of the course will vary according to



the needs and interests of students and faculty. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**FILM 3260** Special Topics in Film 2 Cr.Hrs.3  
(Formerly 152.326) An intensive examination of selected topics in film. Contents of the course will vary according to the needs and interests of students and faculty. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] and written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**FILM 3270** Special Topics in Film 3 Cr.Hrs.6  
An intensive examination of selected topics in film including creative filmmaking projects. Contents of the course will vary according to the needs and interests of students and faculty. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] and written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**FILM 3400** The Director's Cinema 1 Cr.Hrs.3  
(Formerly 152.340) An intensive critical look at the career of one or two major filmmakers. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**FILM 3410** The Director's Cinema 2 Cr.Hrs.3  
(Formerly 152.341) An intensive critical look at the career of one or two major filmmakers. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**FILM 3420** Film Theory Cr.Hrs.3  
(Formerly 152.342) A survey of Film Theory from its beginnings to the present: Eisenstein to André Bazin to Christian Metz and others (film theories, not reviewers). Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor.

**FILM 3430** Screenwriting Cr.Hrs.3  
(Formerly 152.343) An introduction to the techniques and procedures of screenwriting. Students will be expected to complete a screenplay. Students may not hold credit for both FILM 3430 (152.343) and Screenwriting as previously offered under the title of Special Topics. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor.

**FILM 3440** Filmmaking Cr.Hrs.3  
(Formerly 152.344) Basic 16mm filmmaking equipment is used to understand the rudiments of cinematography, editing, and lighting. Students will make two films and edit some pre-shot footage. Students may not hold credit for both FILM 3440 (152.344) and Filmmaking previously offered

under the title of Special Topics. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor.

**FILM 3450** The Animated Film Cr.Hrs.3  
(Formerly 152.345) The art of animation from early cell and puppet films to computer animation and current experimentation. Special attention is given to the "Golden Age of Animation" and to Canada's continuing contribution. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor.

**FILM 3460** Acting for the Camera Cr.Hrs.3  
This course is a practical exploration of the acting techniques appropriate for work in film and television. Each student will be required to perform a significant number of scene bits and a few full scenes on video camera. Students will develop skills connected with directing actors in film; intensive preparatory scene analysis, storyboarding, and camera operation during performance. Students may not hold credit for both FILM 3460 and Acting for the Camera as previously offered under the title of Special Topics. Prerequisite: [a grade of "C" or better in each of FILM 1290 (152.129) and FILM 1310 (or the former FILM 1300 (152.130))] or written consent of instructor.

**FILM 3650** Advanced Filmmaking Cr.Hrs.3  
(Formerly 152.365) This course is for students who have taken FILM 3440 (152.344) Basic Filmmaking and offers an opportunity to pursue longer, more technically ambitious work. Students are required to shoot one (1) 10 minute 16mm film; transfer that film to video; edit and soundtrack it. Prerequisite: [a grade of "C+" or better in FILM 3440 (152.344)] and written consent of instructor.

### 8.10.8 Theatre Program

**Program Chair:** William Kerr  
**Program Office:** 364 University College  
**Telephone:** 204 474 9581  
**E-mail:** [theatre@umanitoba.ca](mailto:theatre@umanitoba.ca)

### 8.10.9 Theatre Program Information,

Theatre is a way of finding out what it means to be human and is therefore a very effective component of a liberal, humanist education. The Theatre Program is focused yet multi-faceted, offering both creative and intellectual opportunities. An intensive, hands-on experience in every aspect of play creation is a hallmark of University of Manitoba Theatre. The interrelationship between the academic program and the Black Hole Company provides students with excellent balance in the creation and interpretation of theatre.

Although it is not a professional acting program in the style of the National Theatre School, the program provides excellent preparation for professional training. It also offers a particular focus on new play development and directing. Many University of Manitoba Theatre graduates have gone on to pursue professional careers in theatre, opera, and film, with or without further study. Many others students have pursued graduate studies or have taken the skills of theatre and applied them in making an impact in careers as diverse



as education, advertising, the media, law, business, politics, psychology, fine arts, and design.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see Section 4: Basic Faculty Regulations for the Three Programs Leading to a B.A.

**Major Program**

For entry to the General Major, the prerequisite is a grade of "C" or better in THTR 1220. For entry to the Advanced Major, the prerequisite is a grade of "C" or better in THTR 1220 and a grade of "C" or better in ENGL 1200 or ENGL 1300 (or the former 004.126) or both ENGL 1310 and ENGL 1340. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

It is not possible for students who have previously completed a Major in Drama to complete a Minor in Theatre.

Courses used toward the Major in Theatre may not be used for a Minor in the other areas (English or Film Studies) and no more than 6 credit hours numbered at the 1000 level in addition to THTR 1220, may be credited towards a Theatre Major.

**Minor (Concentration) Program**

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in THTR 1220.

**8.10.10 Theatre,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR<sup>1</sup> TOTAL: 30 CREDIT HOURS</b>			
THTR 1220	<ul style="list-style-type: none"> <li>• THTR 2160; THTR 2470 plus 6 credit hours from THTR 2150, THTR 2170, THTR 2180, THTR 2490</li> <li>• 6 credit hours from THTR 2480, THTR 2600, THTR 2610, THTR 3460, THTR 3470, THTR 3610, THTR 3620, THTR 3630, THTR 3640</li> <li>• 3 additional credit hours from Theatre courses and/or from List A</li> </ul>		
<b>ADVANCED MAJOR<sup>1,2</sup> TOTAL: 54 CREDIT HOURS</b>			
THTR 1220; ENGL 1200 or ENGL 1300 (or the former 004.126) or both ENGL 1310 and ENGL 1340	<ul style="list-style-type: none"> <li>• THTR 2160; THTR 2470 and ENGL 2960 plus 6 credit hours from THTR 2150, THTR 2170, THTR 2180, THTR 2490</li> <li>• 12 credit hours from THTR 2480, THTR 2600, THTR 2610, THTR 3460, THTR 3470, THTR 3610, THTR 3620, THTR 3630, THTR 3640</li> <li>• 12 additional credit hours from Theatre courses and/or from List A</li> </ul>		
<b>MINOR (CONCENTRATION)<sup>1</sup> TOTAL: 18 CREDIT HOURS</b>			
THTR 1220	12 credit hours from THTR 2150, THTR 2160, THTR 2170, THTR 2180, THTR 2470, THTR 2480, THTR 2490, THTR 2600, THTR 2610, THTR 3460, THTR 3470, THTR 3610, THTR 3620, THTR 3630, THTR 3640		
<b>NOTES:</b>			
<p><sup>1</sup> The content of topics courses (THTR 2600, THTR 2610, THTR 3470, THTR 3610, THTR 3620) will vary from term to term and may be taken more than once for credit.</p> <p><sup>2</sup> It is recommended that students complete a three credit hour theory course, specifically THTR 3460.</p>			

**List A**  
English, Film, and Theatre



ENGL 1200	Representative Literary Works	6
ENGL 1300	Literature since 1900	6
ENGL 2270	Canadian Literature	6
ENGL 2760	Introductory Creative Writing	3
ENGL 2960	Drama 1	3
ENGL 3010	Shakespeare	6
ENGL 3500	Creative Writing [not available for credit with ENGL 2760]	6
ENGL 3520*	Studies in the Forms of Discourse	3
ENGL 3790	Advanced Creative Writing [not available for credit with ENGL 2760]	6
ENGL 3960	Drama 2	3
ENGL xxxx	English, Film, and Theatre Department Special Studies courses approved in advance by the chair of the Theatre Program.	

\* Indicates course no longer offered.

The content of English "Studies" courses varies from year to year; when the proportion of dramatic literature studied is acceptably high, that offering of the course may be used for credit toward a Theatre Major.

#### English, Film, and Theatre

FILM 1290	The Art of the Film 1	3
FILM 1300*	The Art of the Film 2	3
FILM 1310	Film History	3
FILM 2280	Film and Literature	6
FILM 2300	The Popular Film	3
FILM 2330	Film and Contemporary Thought	3
FILM 2370	Experimental Cinema	3
FILM 2380	The International Cinema 1	3
FILM 2390	The International Cinema 2	3
FILM 2400	The American Film to 1950	3
FILM 2410	The American Film from 1950	3
FILM 2420	Realism and Film	3
FILM 2430	The Canadian Film	3
FILM 2460	Film Genres	3
FILM 3250	Selected Topics in Film 1	3
FILM 3260	Selected Topics in Film 2	3
FILM 3270	Special Topics in Film 3	6
FILM 3400	The Director's Cinema 1	3
FILM 3410	The Director's Cinema 2	3
FILM 3420	Film Theory	3
FILM 3430	Screenwriting	3
FILM 3440	Filmmaking	3
FILM 3450	The Animated Film	3
FILM 3460	Acting for the Camera	3

\* Indicates course no longer offered.

in THTR 1220 (154.122)] and written consent of instructor.

#### 8.10.11 Theatre -1000 Level

**THTR 1220** Introduction to Theatre Cr.Hrs.6  
(Formerly 154.122) A study of plays both as literature and as texts for stage presentation. The course will include practical work in studio sessions.

#### 8.10.11 Theatre -2000 Level

**THTR 2150** Theatrical Techniques: Onstage Cr.Hrs.6  
(Formerly 154.215) Advanced acting and an introduction to the fundamentals of directing. Lectures on dramatic and theatrical theory, and the analysis of representative plays; workshops on acting and directing, including the presentation of scenes; participation in the current Black Hole Theatre season. Prerequisite: [a grade of "C" or better

**THTR 2160** Theatrical Techniques: Backstage Cr.Hrs.6  
(Formerly 154.216) An introduction to the backstage arts and crafts of the Theatre: set, props, and costume design and construction; lighting and sound design and execution; stage management; company management. Practical projects required in conjunction with the current Black Hole Theatre season, the nature of the projects to be determined by the student's interests and the need of the company.  
Prerequisite: [a grade of "C" or better in THTR 1220 (154.122)] and written consent of instructor.

**THTR 2170** Specialized Practical Training 1 Cr.Hrs.3  
(Formerly 154.217) Two special workshops, such as voice, stage movement, mime, or directing, from the Prairie Theatre Exchange Adult Program and approved in advance by the University of Manitoba Theatre Program. Students may hold credit for only two of: THTR 2170 (154.217) or



THTR 2180 (154.218) or THTR 2490 (154.249).  
Prerequisite: [a grade of "C" or better in THTR 1220 (154.122)] and written consent of the Theatre program chair.

**THTR 2180** Specialized Practical Training 2 Cr.Hrs.3 (Formerly 154.218) Two special workshop courses, other than those credited for THTR 2170 (154.217), from the Prairie Theatre Exchange Adult Program and approved in advance by the University of Manitoba Theatre Program. Students may hold credit for only two of: THTR 2170 (154.217) or THTR 2180 (154.218) or THTR 2490 (154.249). Prerequisite: [a grade of "C" or better in THTR 1220 (154.122)] and written consent of the Theatre program chair.

**THTR 2470** Fundamentals of Dramatic Analysis Cr.Hrs.3 (Formerly 154.247) This course aims at developing critical and analytic skills specific to the understanding of dramatic texts, through an introduction to key concepts, terminology and critical methods. Prerequisite: [a grade of "C" or better in THTR 1220 (154.122) or ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130)] or written consent of instructor.

**THTR 2480** Theatre History Cr.Hrs.3 (Formerly 154.248) A study of plays, theatre architecture, dramatic theory, acting theory, and the social context in which theatre was presented in an era in the history of the theatre (e.g. Classical Greek and Roman, British Medieval and Tudor, Restoration and Seventeenth Century French). Prerequisite: [a grade of "C" or better in THTR 1220 (154.122)] or written consent of instructor.

**THTR 2490** Specialized Practical Training 3 Cr.Hrs.1.5 (Formerly 154.249) An alternative method of taking THTR 2170 (154.217) or THTR 2180 (154.218). Two special workshops, other than those credited for THTR 2170 (154.217) or THTR 2180 (154.218), taken one each term in a single academic year, from the Prairie Theatre Exchange Adult Program and approved in advance by the University of Manitoba Theatre Program. Students may hold credit for only two of: THTR 2170 (154.217) or THTR 2180 (154.218) or THTR 2490 (154.249). Prerequisite: [a grade of "C" or better in THTR 1220 (154.122)] and written consent of the Theatre program chair.

**THTR 2600** Special Studies 1 Cr.Hrs.3 (Formerly 154.260) An extensive examination of selected topics that will vary from year to year, depending upon the needs and interests of the instructor and students. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**THTR 2610** Special Studies 2 Cr.Hrs.3 (Formerly 154.261) An extensive examination of selected topics that will vary from year to year, depending upon the needs and interests of the instructor and students. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.10.11 Theatre -3000 Level

**THTR 3460** Theory of Drama and Performance Cr.Hrs.3 (Formerly 154.346) Studies in major theories of drama, performance and its reception from Aristotle to the present

day. Theories will be studied in conjunction with an in-depth analysis of a number of dramatic texts. Prerequisite: [a grade of "C" or better in one of: THTR 2470 (154.247) or ENGL 2960 (004.296) or ENGL 2961 (004.296)] or written consent of instructor.

**THTR 3470** Text and Performance Cr.Hrs.3 (Formerly 154.347) Explores the works of a significant playwright or group of playwrights, the appropriate dramatic theory/ies, the production and performance style involved. Students may be required to direct, act and/or design. Prerequisite: [a grade of "C" or better in THTR 2150 (154.215)] or [a grade of "C" or better in six credit hours from: THTR 2170 (154.217) or THTR 2180 (154.218) or THTR 2490 (154.249)] or written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**THTR 3610** Special Studies 3 Cr.Hrs.3 (Formerly 154.361) An extensive examination of selected topics that will vary from year to year, depending upon the needs and interests of the instructor and students. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**THTR 3620** Special Studies 4 Cr.Hrs.3 (Formerly 154.362) An extensive examination of selected topics that will vary from year to year, depending upon the needs and interests of the instructor and students. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**THTR 3630** Practicum 1 Cr.Hrs.3 (Formerly 154.363) Theatre Practicum in which the student works with a professional mentor on a production at the Prairie Theatre Exchange. Openings contingent on a match between student's theatrical field and interest and PTE's needs. Prerequisite: [a grade of "C" or better in six credit hours from: THTR 2150 (154.215) or THTR 2160 (154.216) or THTR 2170 (154.217) or THTR 2180 (154.218) or THTR 2490 (154.249)] and written consent of the Theatre program chair.

**THTR 3640** Practicum 2 Cr.Hrs.6 (Formerly 154.364) Theatre Practicum in which the student works with a professional mentor on a production at the Prairie Theatre Exchange. Openings contingent on a match between student's theatrical field and interest and PTE's needs. Prerequisite: [a grade of "C" or better in six credit hours from: THTR 2150 (154.215) or THTR 2160 (154.216) or THTR 2170 (154.217) or THTR 2180 (154.218) or THTR 2490 (154.249); and written consent of the Theatre program chair.



## 8.11 Department of French, Spanish and Italian

**Head:** Enrique Fernandez

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### 8.11.1 French Program Information,

Romance languages — French, Spanish and Italian — are descendants of Latin and are the most widely spoken of the Romance languages. The department offers language instruction and a rich variety of literature and culture courses, with a particular emphasis on French Canadian literature. Language instruction also includes translation courses in French, Spanish and Italian.

### 8.11.2 French,

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of “C” or better in FREN 1190 or FREN 1200. Only one of FREN 1190 or FREN 1200 may be used for credit in the 30 hour Major. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of “C” or better in FREN 1190 or FREN 1200. Only one of FREN 1190 or FREN 1200 may be used for credit in the 18 hour Minor (Concentration).

### Honours Program

For entry to the Honours program, see see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### 8.11.3 French,

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
FREN 1190 or FREN 1200	12 credit hours from courses numbered at the 2000 level of which at least 3 credit hours must be language and 3 credit hours must be literature	12 credit hours from courses numbered at the 3000 level of which at least 3 credit hours must be language and 3 credit hours must be literature	
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
FREN 1190 or FREN 1200	<ul style="list-style-type: none"> <li>• 18 credit hours of French courses numbered at the 2000 level, including at least 3 credit hours in language and 3 credit hours in literature</li> <li>• 18 credit hours of French courses numbered at the 3000 level, including at least 3 credit hours in language and 3 credit hours in literature</li> <li>• 6 credit hours of French courses numbered at the 4000 level, including at least 3 credit hours in language and 3 credit hours in literature</li> </ul>		
<b>MINOR (CONCENTRATION)<sup>1</sup> TOTAL: 18 CREDIT HOURS</b>			
FREN 1190 or FREN 1200	3 credit hours in a language course numbered at the 2000 level and 3 credit hours in a literature course numbered at the 2000 level	3 credit hours in a language course numbered at the 3000 level and 3 credit hours in a literature course numbered at the 3000 level	
<b>HONOURS SINGLE<sup>1, 2, 3</sup></b>			
FREN 1190 or FREN 1200	<ul style="list-style-type: none"> <li>• FREN 2660, FREN 2870, FREN 2910</li> </ul>	<ul style="list-style-type: none"> <li>• FREN 3100, FREN 3500, FREN 3870, FREN 3910</li> <li>• One of FREN 2680, FREN 2720, FREN 2760, FREN</li> </ul>	<ul style="list-style-type: none"> <li>• FREN 4710 or FREN 4730</li> <li>• 9 additional credit hours of French courses numbered at</li> </ul>



	<ul style="list-style-type: none"> <li>• FREN 3140</li> <li>• FREN 2740 or FREN 3160</li> <li>• 3 credit hours of French language or civilization courses numbered at the 2000 or 3000 level</li> <li>• 12 credit hours of ancillary options</li> </ul>	3120	<ul style="list-style-type: none"> <li>• 3 credit hours of French language or civilization courses numbered at the 2000 or 3000 level</li> <li>• 6 credit hours of ancillary options</li> </ul>	<p>the 4000 level</p> <ul style="list-style-type: none"> <li>• 6 additional credit hours of French courses numbered at the 3000 or 4000 level</li> <li>• 6 credit hours of ancillary options</li> </ul>
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**HONOURS DOUBLE<sup>1, 2, 3</sup>**

FREN 1190 or FREN 1200	<ul style="list-style-type: none"> <li>• FREN 2660</li> <li>• FREN 2870 or FREN 2910</li> <li>• 3 credit hours of French language or civilization courses numbered at the 2000 or 3000 level</li> <li>• 3 credit hours of French literature courses numbered at the 2000 or 3000 level</li> <li>• 12 credit hours from second Honours field</li> <li>• 6 credit hours of ancillary options</li> </ul>	<ul style="list-style-type: none"> <li>• FREN 3100 or FREN 3500</li> <li>• FREN 3870 or FREN 3910</li> <li>• 3 credit hours of French language or civilization courses numbered at the 2000 or 3000 level</li> <li>• 3 credit hours of French literature courses numbered at the 2000 or 3000 level</li> <li>• 12 credit hours from second Honours field</li> </ul>	<ul style="list-style-type: none"> <li>• FREN 4710 or FREN 4730</li> <li>• 6 additional credit hours of French courses numbered at the 4000 level</li> <li>• 3 additional credit hours of French courses numbered at the 3000 or 4000 level</li> <li>• 12 credit hours from second Honours field</li> </ul>
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**NOTES:**

<sup>1</sup> Students in Year 2 will normally take courses numbered at the 2000 level and students in Year 3 will normally take courses numbered at the 3000 level.

<sup>2</sup> Ancillary options are courses taken from outside the Honours field of study.

<sup>3</sup> Honours courses: all 4000 level courses.

The three areas of study are identified in the course listings with the following letters in brackets after the course title:

- A: French Language
- B: French Literature
- C: French Civilization

**NOTE:** Civilization courses FREN 2810 and FREN 3850 may be counted as either French language or literature credits, but not both.

The language of instruction in all French courses except FREN 1150 and FREN 1200 is French. In courses FREN 1150 and FREN 1200, at the discretion of the instructor, English may be used to clarify difficult points of grammar and critical analysis of literature. With written permission of the department head, students registered on the Fort Garry campus may take courses in French language and literature at Université de Saint-Boniface.

For information regarding Canadian Studies, see Section 8.3.

**8.11.4 French -1000 Level**

**FREN 1150** Introductory French Cr.Hrs.6 (Formerly 044.115) A study of the fundamental structures of French, with oral and written practise. For students with no prior knowledge of French, or who have studied French up to and including Senior 3 level or its equivalent. Students with

Senior 4 French may not normally take the course. Not open to students who have previously obtained credit in FREN 1190 (044.119) or FREN 1200 (044.120) or FREN 1252 or the former FREN 1250 (044.125). Not for credit in French Major or Minor.

**FREN 1190** Français Cr.Hrs.6

(Formerly 044.119) Un cours comportant des éléments de langue, de linguistique et de littérature destiné aux étudiants issus des écoles françaises ou aux étudiants de la filière immersion. Students may not hold credit for both FREN 1190 (044.119) and FREN 1200 (044.120). Prerequisite: Senior Matriculation French or written consent of department head.

**FREN 1200** French 1 Cr.Hrs.6

(Formerly 044.120) Language study and practise in the classroom and language laboratory, and readings in French and French-Canadian culture. Students may not hold credit for both FREN 1200 (044.120) and FREN 1190 (044.119). Prerequisite: Senior Matriculation French or a grade of "C" or better in FREN 1150 (044.115).

**FREN 1252** Français oral 1 Cr.Hrs.3

For students whose mother tongue is not French, and who wish to improve their understanding, fluency and correctness in spoken French. Regular attendance is obligatory. Direct access to FREN 2610. Not open to students from Français or Immersion high school programs. Students may not hold credit for both FREN 1252 and the former FREN 1250 (044.125). Prerequisite: [French 40S or 40G, or the former French 300 or 301] or [a grade of "B" or better in FREN 1150 (044.115) or "C" or better in FREN 1200 (044.120)] or [a brief interview and written consent of department head].

**8.11.4 French -2000 Level****FREN 2610** Français oral 2 (A) Cr.Hrs.3

(Formerly 044.261) Ce cours vise à l'amélioration de la compréhension du français parlé ainsi qu'au développement de la facilité et de la correction de l'expression orale. Une attention particulière sera vouée au développement du vocabulaire ainsi qu'à la maîtrise des structures grammaticales. Le cours n'a pas été conçu pour les étudiants qui sont déjà bilingues. Prerequisite: [a grade of "C" or better in FREN 1252 or the former FREN 1250 (044.125)] or written consent of department head.

**FREN 2620** Grammaire et lexique (A) Cr.Hrs.3

(Formerly 044.262) Révision intensive de la grammaire et enrichissement du vocabulaire. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119) or FREN 1200 (044.120)] or written consent of department head.

**FREN 2630** Special Studies (A) Cr.Hrs.3

(Formerly 044.263) The content of this course will vary from year to year depending on the needs and interests of instructors and students. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**FREN 2640** Special Studies (B) Cr.Hrs.3

(Formerly 044.264) The content of this course will vary from year to year depending on the needs and interests of instructors and students. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head. As the course content will vary from year to year,

students may take this course more than once for credit.

**FREN 2642** Special Topics (B) Cr.Hrs.3

The content of this course will vary depending on the needs and interests of instructors and students. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head. As the course content will vary from section to section, students may take this course more than once for credit.

**FREN 2660** Analyses textuelles (A) Cr.Hrs.3

(Formerly 044.266) A partir de textes courts en prose et en vers, l'étudiant(e) apprendra à reconnaître les moyens linguistiques et stylistiques dont dispose l'auteur pour créer l'expressivité de son texte. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head.

**FREN 2680** Littérature féminine française (B) Cr.Hrs.3

(Formerly 044.268) Une étude de textes écrits par des femmes et analysés selon la perspective des théories féministes contemporaines. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head.

**FREN 2700** Poésie et théâtre canadiens-français (B) Cr.Hrs.3

(Formerly 044.270) Introduction à la poésie et au théâtre canadiens-français. Parmi les poètes se trouveront Nelligan, Saint-Denis Garneau et Anne Hébert. Sur la liste des dramaturges figureront Michel Tremblay, Marcel Dubé et Gratien Gélinas. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head.

**FREN 2720** Roman français du vingtième siècle (B) Cr.Hrs.3

(Formerly 044.272) Ce cours est destiné à initier l'étudiant(e) au roman français du vingtième siècle. Les romanciers étudiés seront choisis parmi les plus connus, tels que Proust, Gide, Colette, Mauriac, Cocteau, Camus, Robbe-Grillet, Duras, Cardinal et Yourcenar. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head.

**FREN 2740** Théâtre et poésie du dix-neuvième siècle (B) Cr.Hrs.3

(Formerly 044.274) Initiation aux poètes et aux dramaturges représentatifs des mouvements romantique, symboliste et réaliste. Parmi les auteurs choisis figureront Hugo, Vigny, Musset, Baudelaire, Rimbaud, Scribe, Dumas fils, Rostand. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head.

**FREN 2770** Littératures francophones d'Afrique et des Antilles (B) Cr.Hrs.3



Études des principales tendances littéraires de l'Afrique et des Antilles francophones depuis l'époque coloniale jusqu'à nos jours: négritude, engagement anticolonial, post-indépendance et désillusion, créolité, immigration. Lecture d'œuvres marquantes. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head.

**FREN 2810** Civilisation française moderne (A, B, C) Cr.Hrs.3  
(Formerly 044.281) Ce cours a pour objet l'étude de la civilisation française au plus tôt depuis le XVII<sup>e</sup> siècle, au plus tard depuis la Révolution. Il portera sur les transformations connues par la France dans ses structures politiques, sociales et ses modes de vie. Il s'attachera simultanément au mouvement des idées et à la création artistique dans les domaines de l'architecture, de la sculpture, de la peinture et de la musique. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head.

**FREN 2870** Stylistique comparée 1 (A) Cr.Hrs.3  
(Formerly 044.287) Initiation à la stylistique comparée du français et de l'anglais. Ce cours comporte des exercices de traduction et d'analyse de traductions. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head.

**FREN 2910** Expression écrite 1 (A) Cr.Hrs.3  
(Formerly 044.291) Une étude des techniques de composition libre. Le cours comportera notamment une révision de la phrase complexe et une analyse d'éléments de rhétorique particulièrement utiles pour la rédaction en français. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head.

#### 8.11.4 French -3000 Level

**FREN 3020** Révision intensive de la grammaire française (A) Cr.Hrs.3  
Étude systématique et avancée de la grammaire française avec révision de vocabulaire. Ce cours est la suite logique de FREN 2620 (Grammaire et lexique) mais on peut s'y inscrire sans l'avoir suivi. Dans ce cours-ci, nous parlerons des nuances de la langue qui ne sont pas traitées en deuxième année mais nous reverrons aussi quelques-unes des questions fondamentales examinées auparavant. Prerequisite: [a grade of "C" or better in any 2000-level French course] or written consent of department head. FREN 2610 (044.261) may not be used as a prerequisite.

**FREN 3100** Littérature française du dix-huitième siècle (B) Cr.Hrs.3  
(Formerly 044.310) Après une introduction portant sur le dix-huitième siècle en France, on étudiera quelques-uns des grands auteurs et dramaturges de ce siècle, tels Montesquieu, Voltaire, Prévost, Marivaux, Beaumarchais et Rousseau. Prerequisite: [a grade of "C" or better in any 2000-level French course] or written consent of department head. FREN 2610 (044.261) may not be used as a

prerequisite.

**FREN 3140** Roman canadien-français (B) Cr.Hrs.3  
(Formerly 044.314) Ce cours est destiné à initier l'étudiant(e) au roman canadien-français. Parmi les auteurs étudiés se trouveront Hubert Aquin, Marie-Claire Blais, Roch Carrier. Un accent particulier sera mis sur l'interprétation historique. Prerequisite: [a grade of "C" or better in any 2000-level French course] or written consent of department head. FREN 2610 (044.261) may not be used as a prerequisite.

**FREN 3160** Roman et nouvelle français du dix-neuvième siècle (B) Cr.Hrs.3  
(Formerly 044.316) Étude des principaux romanciers romantiques, réalistes et naturalistes: un choix de Chateaubriand, Constant, Balzac, Sand, Flaubert, Zola, Maupassant. Prerequisite: [a grade of "C" or better in any 2000-level French course] or written consent of department head. FREN 2610 (044.261) may not be used as a prerequisite.

**FREN 3350** Français oral 3 (A) Cr.Hrs.3  
(Formerly 044.335) Ce cours vise au perfectionnement de la facilité d'expression, de la correction et de la compréhension du français oral. Le professeur se servira de certains aspects de la culture canadienne-française, et dans une moindre mesure de la culture française, pour stimuler la conversation. Prerequisite: [a grade of "C" or better in FREN 2610 (044.261)] or written consent of department head.

**FREN 3500** Littérature du 17<sup>e</sup> siècle (B) Cr.Hrs.3  
(Formerly 044.350) Ce cours constitue une analyse d'ouvrages marquants tirés du domaine de la littérature française classique. Prerequisite: [a grade of "C" or better in any 2000-level French course] or written consent of department head. FREN 2610 (044.261) may not be used as a prerequisite.

**FREN 3580** Travail indépendant (A, B) Cr.Hrs.3  
(Formerly 044.358) Ce demi-cours s'étendra sur toute la durée des deux trimestres. Chaque étudiant sera placé sous la direction d'un professeur qui l'assistera dans l'établissement d'un programme de lectures relatif à un domaine d'intérêt particulier pour l'étudiant en question. A la fin du cours l'étudiant présentera un mémoire à son directeur. Not available for credit towards a Major or Minor in French. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**FREN 3830** Special Studies (A) Cr.Hrs.3  
(Formerly 044.383) The content of this course will vary from year to year depending on the needs and interests of instructors and students. Prerequisite: [a grade of "C" or better in any 2000-level French course]. FREN 2610 (044.261) may not be used as a prerequisite. As the course content will vary from year to year, students may take this course more than once for credit.

**FREN 3840** Special Studies (B) Cr.Hrs.3  
(Formerly 044.384) The content of this course will vary from year to year depending on the needs and interests of instructors and students. Prerequisite: [a grade of "C" or better in any 2000-level French course]. FREN 2610 (044.261) may not be used as a prerequisite. As the course content will vary from year to year, students may take this



course more than once for credit.

**FREN 3842** Special Topics (B) Cr.Hrs.3

The content of this course will vary depending on the needs and interests of instructors and students. Prerequisite: [a grade of "C" or better in any 2000-level French course]. FREN 2610 (044.261) may not be used as a prerequisite. As the course content will vary from section to section, students may take this course more than once for credit.

**FREN 3850** Civilisation canadienne-française (A, B, C) Cr.Hrs.3

(Formerly 044.385) Aspects du développement de la culture du Canada français. Éléments de la vie politique, sociale et artistique des Québécois et des francophones hors Québec surtout au 20<sup>e</sup> siècle. Prerequisite: [a grade of "C" or better in any 2000-level French course] or written consent of department head.

**FREN 3860** Études sur Beauvoir (B) Cr.Hrs.3

(Formerly 044.386) Le but de ce cours est d'étudier l'oeuvre et la pensée de Simone de Beauvoir dont l'importance dans les études féministes continue d'être très marquée. Un choix de textes sera effectué parmi ses essais philosophiques, ses romans et son autobiographie. Prerequisite: [a grade of "C" or better in any 2000-level French course] or written consent of department head.

**FREN 3910** Expression écrite 2 (A) Cr.Hrs.3

(Formerly 044.391) Ce cours est une étude des techniques de composition libre à un niveau avancé. Il comportera notamment des exercices avec la phrase complexe et l'étude et la pratique d'un certain nombre de genres de français écrit. Prerequisite: [a grade of "C" or better in FREN 2910 (044.291)] or written consent of department head.

### 8.11.4 French -4000 Level

**FREN 4610** Études spécialisées Cr.Hrs.3

Le contenu de ce cours variera d'année en année selon les besoins et les intérêts des étudiants et du professeur. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**FREN 4620** Pratiques et théories critiques (B) Cr.Hrs.3

(Formerly 044.462) Ce cours est destiné à initier l'étudiant(e) à l'analyse critique de textes littéraires. Le choix des pratiques et des théories critiques dépendra de l'instructeur. Prerequisite: written consent of department head.

**FREN 4640** Séminaire: Littérature française du vingtième siècle (B) Cr.Hrs.3

(Formerly 044.464) Le but de ce cours est d'offrir à l'étudiant(e) une introduction à certaines oeuvres littéraires complexes, mais essentielles, de ce siècle, dans les différents ordres de la poésie, du théâtre et du roman. Elles pourraient être prises à des auteurs comme Claudel, Valéry, Saint-John Perse, Antonin Artaud, Proust, Gide, Sartre, Yourcenar. Prerequisite: written consent of department head.

**FREN 4650** Études sur l'Ancien Régime (B) Cr.Hrs.3

L'étude des oeuvres d'un auteur, d'une période ou d'un thème d'avant la Révolution française, du XVI<sup>e</sup> au XVIII<sup>e</sup>

siècles. Le choix des oeuvres, de la période ou du thème dépendra des besoins et des intérêts des étudiants et de l'instructeur. Prerequisite: written consent of department head.

**FREN 4710** Séminaire de langue (A) Cr.Hrs.3

(Formerly 044.471) L'objet de ce cours est d'affermir la maîtrise du français chez l'étudiant(e) par des études de grammaire approfondie, une approche méthodique des problèmes majeurs de rhétorique et de la stylistique, ainsi que par une pratique régulière de l'expression orale destinée à en assurer l'aisance et la correction. Prerequisite: written consent of department head.

**FREN 4730** Traduction (A) Cr.Hrs.3

(Formerly 044.473) Une formation dans la traduction d'extraits tirés d'oeuvres de prosateurs anglais et français. Seront également traduits des textes de nature technique traitant de l'actualité politique, sociale, économique, juridique, etc. Prerequisite: written consent of department head.

### 8.11.5 Spanish

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in SPAN 1180, or a grade of "C" or better in both SPAN 1190 and SPAN 1262 (or SPAN 1290), or a grade of "C" or better in both SPAN 1280 and 3 credit hours from Spanish courses numbered at the 2000 level. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

It is recommended that students who wish to Major in Spanish take the introductory course in the Summer Session prior to entering the fall program, or take SPAN 1262 and SPAN 1272 (or SPAN 1290) in the Summer Session prior to their entry into the second year. This will allow for a wider variety of course selections in the final two years.

#### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in SPAN 1180, or a grade of "C" or better in both SPAN 1190 and SPAN 1262 (or SPAN 1290), or a grade of "C" or better in both SPAN 1280 and 3 credit hours from Spanish courses numbered at the 2000 level.

#### Other



Students entering the university with prior knowledge of Spanish may be allowed 'prerequisite standing' in course SPAN 1180 by the Spanish section of the department. Special permission is required to enter a higher numbered course.

With written permission of the department head, students registered on the Fort Garry campus may take courses in Spanish language and literature at Université de Saint-Boniface.

All Spanish courses except SPAN 1180 and SPAN 1190 are taught in Spanish.

For information regarding the Minor program in Latin American Studies, see Section 8.19.

**8.11.6 Spanish**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR (OPTION 1)<sup>1</sup> TOTAL: 30 CREDIT HOURS</b>			
SPAN 1180	SPAN 1262 (or the former SPAN 1260) and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280 <sup>3</sup> and 3 credit hours from Spanish courses numbered at the 2000 level	<ul style="list-style-type: none"> <li>• SPAN 2550</li> <li>• 9 credit hours from Spanish courses numbered at the 2000 level</li> <li>• 6 credit hours from Spanish courses numbered at the 3000 level</li> </ul>	
<b>GENERAL MAJOR (OPTION 2)<sup>1</sup> TOTAL: 30 CREDIT HOURS</b>			
SPAN 1190	<ul style="list-style-type: none"> <li>• SPAN 1262 (or the former SPAN 1260) and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280<sup>3</sup> and 3 credit hours from Spanish courses numbered at the 2000 level</li> <li>• SPAN 2550</li> <li>• 6 credit hours from Spanish courses numbered at the 2000 level</li> </ul>	12 credit hours from Spanish courses numbered at the 3000 level	
<b>GENERAL MAJOR (OPTION 3)<sup>2</sup> TOTAL: 30 CREDIT HOURS</b>			
SPAN 1280 and 3 credit hours from Spanish courses numbered at the 2000 level	<ul style="list-style-type: none"> <li>• SPAN 2550</li> <li>• 9 credit hours from Spanish courses numbered at the 2000 level</li> </ul>	12 credit hours from Spanish courses numbered at the 3000 level	
<b>ADVANCED MAJOR (OPTION 1)<sup>1</sup> TOTAL: 48 CREDIT HOURS</b>			
SPAN 1180	SPAN 1262 (or the former SPAN 1260) and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280 <sup>3</sup> and 3 credit hours from Spanish courses numbered at the 2000 level	<ul style="list-style-type: none"> <li>• SPAN 2550</li> <li>• 12 credit hours from Spanish courses numbered at the 2000 level</li> <li>• 6 credit hours from Spanish courses numbered at the 3000 level</li> </ul>	15 credit hours from Spanish courses numbered at the 3000 level
<b>ADVANCED MAJOR (OPTION 2)<sup>1</sup> TOTAL: 48 CREDIT HOURS</b>			
SPAN 1190	• SPAN 1262 (or the former SPAN 1260) and SPAN 1272	• 6 credit hours from Spanish courses numbered at the 2000	15 credit hours from Spanish courses numbered at the



	(or the former SPAN 1270), or SPAN 1290, or SPAN 1280 <sup>3</sup> and 3 credit hours from Spanish courses numbered at the 2000 level  • SPAN 2550  • 6 credit hours from Spanish courses numbered at the 2000 level	level  • 9 credit hours from Spanish courses numbered at the 3000 level	3000 level
<b>ADVANCED MAJOR (OPTION 3)<sup>2</sup> TOTAL: 48 CREDIT HOURS</b>			
SPAN 1280 and 3 credit hours from Spanish courses numbered at the 2000 level	• SPAN 2550  • 9 credit hours from Spanish courses numbered at the 2000 level	• 6 credit hours from Spanish courses numbered at the 2000 level  • 9 credit hours from Spanish courses numbered at the 3000 level	15 credit hours from Spanish courses numbered at the 3000 level
<b>MINOR (CONCENTRATION) (OPTION 1)<sup>1</sup> TOTAL: 18 CREDIT HOURS</b>			
SPAN 1180	SPAN 1262 (or the former SPAN 1260) and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280 <sup>3</sup> and 3 credit hours from Spanish courses numbered at the 2000 level	• 3 credit hours from Spanish courses numbered at the 2000 level  • SPAN 2550	
<b>MINOR (CONCENTRATION) (OPTION 2)<sup>1</sup> TOTAL: 18 CREDIT HOURS</b>			
SPAN 1190	• SPAN 1262 (or the former SPAN 1260) and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280 <sup>3</sup> and 3 credit hours from Spanish courses numbered at the 2000 level  • SPAN 2550	6 credit hours from Spanish courses numbered at the 3000 level	
<b>MINOR (CONCENTRATION) (OPTION 3)<sup>2</sup> TOTAL: 18 CREDIT HOURS</b>			
SPAN 1280 and 3 credit hours from Spanish courses numbered at the 2000 level	• 3 credit hours from Spanish courses numbered at the 2000 level  • SPAN 2550	6 credit hours from Spanish courses numbered at the 3000 level	
<b>NOTES:</b>			
<p><sup>1</sup> Options 1 and 2 are not open to students with native oral fluency in Spanish. Students with native oral fluency in Spanish are advised to follow Option 3.</p> <p><sup>2</sup> Option 3 is open to students with native oral fluency in Spanish. Such students may enter Spanish courses numbered at the 2000 level with a grade of "C" or better in SPAN 1280.</p> <p><sup>3</sup> With written consent of the department head students may be allowed to substitute both SPAN 1262 and SPAN 1272 (or SPAN 1290) with both SPAN 1280 (3) and an additional 3 credit hours of 2000 level Spanish courses.</p>			



### 8.11.7 Spanish -1000 Level

**SPAN 1180** Introductory Spanish Cr.Hrs.6  
(Formerly 044.118) (Lab required) A course designed for those with little or no previous knowledge of Spanish. The course includes grammar, reading and oral practice, with language laboratory exercises. An oral approach is utilized. The student is given glimpses of cultural aspects of Spain and Spanish America. Students with Senior 4 Spanish may not normally take the course for credit. Not open to students with native oral fluency. Students may not hold credit for SPAN 1180 and any of: SPAN 1181 (former TRAD 1181 or former 122.118) or SPAN 1190 or SPAN 1191. Not open to students who have previously obtained credit in SPAN 1262 or the former SPAN 1260 (044.126) or SPAN 1261 (former TRAD 1261 or former 122.126) or SPAN 1272 or the former SPAN 1270 (044.127) or SPAN 1271 (former TRAD 1271 or former 122.127) or SPAN 1280 or SPAN 1290.

**SPAN 1190** Introductory Spanish 2 Cr.Hrs.3  
(Lab required) The second term of SPAN 1180 Introductory Spanish. This course is intended for students who have already knowledge of the alphabet and the sound system, as well as elementary comprehension, communication and writing skills equivalent to those that would be achieved in the first term of SPAN 1180. Students may not hold credit for SPAN 1190 and any of: SPAN 1191 or SPAN 1180 (044.118) or the former SPAN 1181 (former TRAD 1181 or former 122.118). Not open to students who have previously obtained credit in SPAN 1262 or the former SPAN 1260 (044.126) or SPAN 1261 (former TRAD 1261 or former 122.126) or SPAN 1272 or the former SPAN 1270 (044.127) or SPAN 1271 (former TRAD 1271 or former 122.127) or SPAN 1280 or SPAN 1290. Prerequisite: [a grade of "C" or better in SPAN 1171] or [Senior 4 Spanish] or written consent of instructor or department head.

**SPAN 1262** Intermediate Spanish Grammar and Conversation 1 Cr.Hrs.3  
(Lab required) This course is the first of the intermediate Spanish language sequence. Focus is on developing intermediate skills in reading, writing, speaking and listening. The primary goals are to build communicative competence and enhance social and cultural awareness of the Spanish-speaking world. Not open to students with native oral fluency. Students may not hold credit for SPAN 1262 and any of: SPAN 1261 (former TRAD 1261 or former 122.126) or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126). Prerequisite: [a grade of "C" or better in SPAN 1180 (044.118) (the former SPAN 1181 or the former TRAD 1181 or the former 122.118) or SPAN 1190 or SPAN 1191] or written consent of instructor or department head.

**SPAN 1272** Intermediate Spanish Grammar and Conversation 2 Cr.Hrs.3  
(Lab required) This course is the second of the intermediate Spanish language sequence. Focus is on continued development of intermediate skills in reading, writing,

speaking and listening. The primary goals are to further enhance communicative competence and social and cultural awareness of the Spanish-speaking world. Not open to students with native oral fluency. Students may not hold

credit for SPAN 1272 and any of: SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1270 (044.127) or TRAD 1271 (122.127). Prerequisite: [a grade of "C" or better in SPAN 1262 or the former SPAN 1260 (044.126) or SPAN 1261 (or the former TRAD 1261 or the former 122.126)] or written consent of instructor or department head.

**SPAN 1280** Spanish for Native Speakers Cr.Hrs.3  
A survey of grammar and writing for people with an advanced level of oral Spanish. All the class exercises, readings, activities and examinations will be in Spanish. Students may not hold credit for SPAN 1280 and any of: SPAN 1262 or the former SPAN 1260 (044.126) or SPAN 1261 (former TRAD 1261 or former 122.126) or SPAN 1272 or the former SPAN 1270 (044.127) or SPAN 1271 (former TRAD 1271 or former 122.127) or SPAN 1290. Prerequisite: written consent of instructor or department head.

**SPAN 1290** Accelerated Intermediate Spanish Cr.Hrs.6  
(Lab required) This is a one term accelerated course which combines the content of SPAN 1262 and SPAN 1272 (or the former SPAN 1260 (044.126) and the former SPAN 1270 (044.127)). It is a review of grammar and pronunciation structured around extensive writing practice and conversation of contemporary issues relating to the Spanish speaking world. There will be six hours of classroom instruction with a two hour laboratory per week. This course is not open to students with native oral fluency. Students may not hold credit for SPAN 1290 and any of: SPAN 1262 or the former SPAN 1260 (044.126) or SPAN 1261 or SPAN 1272 or the former SPAN 1270 (044.127) or SPAN 1271 or SPAN 1280 or the former TRAD 1261 (122.126) or the former TRAD 1271 (122.127). Prerequisite: [a grade of "C" or better in SPAN 1180 (044.118) (SPAN 1181 or the former TRAD 1181 or the former 122.118) or SPAN 1190] or written consent of instructor or department head.

### 8.11.7 Spanish -2000 Level

**SPAN 2200** Spanish American Culture and Civilization Cr.Hrs.3  
(Formerly 044.220) A picture of the geographical, political, economic, social, artistic and cultural forces in Latin America. Essays, cultural readings, newspaper articles, magazines and films are utilized to enhance awareness and to stimulate discussion. Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1272 or SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126) or the former SPAN 1270 (044.127) or the former TRAD 1271 (122.127)] or written consent of department head.

**SPAN 2510** Survey of Spanish Civilization Cr.Hrs.3  
(Formerly 044.251) A study of the history of Spanish culture with special stress on its non-literary arts, and selected aspects of Spanish life. Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1272 or SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126) or the former SPAN 1270 (044.127) or the former TRAD 1271 (122.127)] or written consent of department head.

**SPAN 2520** Introduction to Spanish Literature Cr.Hrs.3  
(Formerly 044.252) This course will consist of an introduction to Spanish literary characteristics and the study of selected



works from the major historical periods and genres.  
Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1272 or SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126) or the former SPAN 1270 (044.127) or the former TRAD 1271 (122.127)] or written consent of department head.

**SPAN 2550** Advanced Spanish Composition Cr.Hrs.3 (Formerly 044.255) Designed to enhance the student's ability in writing Spanish. Emphasis on advanced grammatical concepts and clarity of expression. Students may not hold credit for both SPAN 2550 (044.255) and SPAN 2551. Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126)] or written consent of department head.

**SPAN 2560** Advanced Spanish Conversation Cr.Hrs.3 (Formerly 044.256) Designed to enhance the student's conversational skills. Intensive oral practise as well as written exercises based on contemporary issues. Not open to students with native oral fluency. Prerequisite: [a grade of "C" or better in both SPAN 1262 (the former SPAN 1260 (044.126)) and SPAN 1272 (the former SPAN 1270 (044.127))] or [a grade of "C" or better in both SPAN 1261 (the former TRAD 1261 (122.126)) and SPAN 1271 (the former TRAD 1271 (122.127))] or [a grade of "C" or better in SPAN 1290] or written consent of department head.

**SPAN 2570** Special Studies Cr.Hrs.3 (Formerly 044.257) The content of this course is variable, depending on the needs and interests of students and instructors. A tutorial form is used. Prerequisite: [a grade of "C" or better in any 1000-level Spanish course] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**SPAN 2580** Contemporary Spanish Female Playwrights Cr.Hrs.3  
This course introduces students to the study of Spanish theater written by contemporary women writers. The course will explore how they use their work and the stage to denounce a contemporary Spanish society that needs to be reexamined. Analysis will underscore how these playwrights treat dis/similar subject matters: search for identity, gender, sexuality, relationships, patriarchal values, feminism, among others. The course will be taught in Spanish. All class readings and examinations are in Spanish. Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1272 or SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126) or the former SPAN 1270 (044.127) or the former TRAD 1271 (122.127)] or written consent of department head.

### 8.11.7 Spanish -3000 Level

**SPAN 3070** Dali, Lorca, Bunuel Cr.Hrs.3  
Study of the three most representative members of Spanish surrealism and avant-gardism in the twentieth century. Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3220** Contemporary Spanish Cinema Cr.Hrs.3 (Formerly 044.322) A survey of Contemporary Spain through its cinema and other cultural manifestations. All the class readings, class lectures, movies and examinations are in Spanish. Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3270** Special Studies Cr.Hrs.3 (Formerly 044.327) The content of this course is variable, depending on the needs and interests of students and instructors. A tutorial format is used. Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**SPAN 3290** The Art of Translation Cr.Hrs.3 (Formerly 044.329) A course on the basic techniques of translation and a study of specialized vocabulary related to the professions. Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3300** Cinema and Literature Cr.Hrs.3  
A survey of the culture (Spain and Latin America) through its literature and cinema. The course will be taught in Spanish. All the readings, movies, activities and examinations will be in Spanish. Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3310** Advanced Spanish Vocabulary and Composition Cr.Hrs.3  
A survey of grammar and vocabulary, the course also emphasizes and enhances students' writing abilities. The course will be taught in Spanish. All the class exercises, readings, activities and examinations will be in Spanish. Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3320** Testimony and Human Rights in Latin America Cr.Hrs.3  
A survey of the culture of human rights in Latin America through its testimonial literature. The course will be taught in Spanish. All readings, activities and examinations will be in Spanish. Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3330** Spanish Phonetics and Pronunciation Cr.Hrs.3  
This course includes a thorough study of advanced Spanish phonetics and pronunciation. Students may not hold credit for both SPAN 3330 and the former SPAN 3280 (044.328). Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3340** Spanish Syntax and Grammar Cr.Hrs.3  
This course includes a thorough study of advanced Spanish syntax and grammar. Students may not hold credit for SPAN 3340 and any of: SPAN 3441 or the former SPAN 3280 (044.328). Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3670** Poetry and Novel of the Golden Age Cr.Hrs.3 (Formerly 044.367) This course will concentrate on major poets and novelists of the sixteenth and seventeenth centuries such as Garcilaso de la Vega, Fray Luis de Leon,



S. Juan de la Cruz, Lope de Vega, Gongora, and Cervantes.  
Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3680** Drama of the Golden Age Cr.Hrs.3  
(Formerly 044.368) A study of representative works by the principal dramatists of the Spanish classical period, such as Lope de Vega, Tirso de Molina, Vélez de Guervara, and Calderon de la Barca. Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3780** Short Fiction in Spanish Cr.Hrs.3  
(Formerly 044.378) A study of short narrative fiction as a genre in Spain and Latin America through the close reading of representative works. Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

**SPAN 3790** Latin American Cinema and Society Cr.Hrs.3  
(Formerly 044.379) A survey of contemporary Latin American society through its cinema. The course will be taught in Spanish. All class readings, movies and examinations are in Spanish. Prerequisite: [a grade of "C" or better in any 2000-level Spanish course] or written consent of department head.

### 8.11.6 Italian

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in ITLN 1080.

It is not possible to have a Minor in Italian and a Major in Italian Studies.

#### Other

All Italian courses except ITLN 1080 are taught in Italian.

Travel/study courses in Italian may be offered in the Summer Session; see department for information.

#### 8.11.10 Italian,

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
ITLN 1080	6 credit hours selected from Italian courses numbered at the 2000 level	6 credit hours selected from Italian courses numbered at the 3000 level	

#### 8.11.11 Italian Studies,

The Major (General and Advanced) in Italian Studies is an interdisciplinary program designed to provide advanced reading, writing, oral, and translation skills in contemporary Italian language, in the context of a broad appreciation for Italian/Roman history and its contributions to art and culture. For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in ITLN 1080. For students who have taken additional

courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

It is not possible to have a Major in Italian Studies and a Minor in Italian.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

#### 8.11.12 Italian Studies,

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
ITLN 1080	ITLN 2080, or ITLN 2090 and ITLN 2100	6 credit hours selected from ITLN 3050, ITLN 3060, ITLN	



		3760, ITLN 3770	
	Plus at least 12 credit hours of courses selected from List A		
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
ITLN 1080	ITLN 2080, or ITLN 2090 and ITLN 2100	6 credit hours selected from ITLN 3050, ITLN 3060, ITLN 3760, ITLN 3770	
	Plus at least 30 credit hours of courses selected from List A		

**List A**

**Faculty of Arts**

Italian

ITLN 3050	Italian Through Literature	3
ITLN 3060	Italian Through Film	3
ITLN 3760	Italian Translation Workshop	3
ITLN 3770	Modern Italian Usage	3

Classics

CLAS 1280	Introduction to Ancient Roman Culture	3
CLAS 2160	Roman History: The Roman Republic, 753-30 BC	3
CLAS 2170	Roman History: The Roman Empire, 30 BC-AD 337	3
CLAS 2622	Latin Literature in Translation	3
CLAS 2680	Roman Art and Archaeology	3
CLAS 3620*	Latin Literature in Translation	3
003.261*	Roman History	6
LATN 1080	Introduction to the Reading of Latin 1	3
LATN 1090	Introduction to the Reading of Latin 2	3
LATN 1320	Intermediate Readings in Latin	3
LATN 2720	Selected Readings in Republican and Augustan Poetry	3
LATN 2740	Selected Readings in Republican and Augustan Prose	3
LATN 2780	History of the Latin Language	3
LATN 2800	Readings in Medieval or Renaissance Latin	3
LATN 3740	Roman Comedy	3
LATN 3760	Orations of Cicero	3
LATN 3780	Roman Satire	3
LATN 3800	Lyric and Elegiac Poetry of the Augustan Age	3
LATN 3820	Virgil's Aeneid	3
LATN 3840	Virgil's Eclogues and Georgics	3
LATN 3860	The Roman Historians	3
LATN 3880	Poetry of the Silver Age	3

History

HIST 2350	Europe 1789-1870 (E)	3
HIST 2360	Europe 1870 to the Present (E)	3
HIST 2370	History of Europe since the French Revolution (E)	6
HIST 2900	Topics in Social History (G) (when taught as "Topic: Italy")	6
HIST 3120	Topics in History 2 (G) (when taught as "Topic: Italy")	3
HIST 3136	History of Medieval Italy, 568-1300 (D)	3
HIST 3138	History of Medieval Italy, 1300-1500 (D)	3
HIST 3140	Medieval Italy (D)	6
HIST 3270*	Roman Law in Medieval Europe (D)	3
HIST 3680	Europe, 1870-1945 (E)	6
HIST 3682	Europe 1870-1918 (E)	3
HIST 3684	Europe 1918-1945 (E)	3
HIST 4530*	Europe, 1870-1914 (E)	6

**School of Art**

FAAH 2060	Medieval to Early Renaissance Art and Architecture	3
FAAH 2070	Renaissance to Baroque Art and Architecture	3
FAAH 3130	Topics in Medieval Art and Architecture	3
FAAH 3140	Topics in Renaissance and Baroque Art and Architecture	3

**Marcel A. Desautels Faculty of Music**

MUSC 1070	Introduction to the History of Music	3
MUSC 1080	History of Music 2	3
MUSC 3100	Opera Repertoire	3

\*indicates course no longer offered.

For course descriptions, see departmental listings.



### 8.11.12 Italian Course Descriptions

#### ITLN 1080 Introductory Italian Cr.Hrs.6

(Formerly 044.108) An introduction to the Italian language for students with little or no knowledge of Italian. The course emphasizes the learning and practise of vocabulary, grammar and the development of both written and spoken Italian. A language laboratory will help students practise and improve their oral Italian. Not open to students who have previously obtained credit in ITLN 2080 (044.208).

#### ITLN 2080 Intermediate Italian Cr.Hrs.6

(Formerly 044.208) This course consists of a thorough review of grammatical structures for students with previous knowledge of Italian. Readings of a number of twentieth-century Italian authors are used as a basis for discussion. Language study and practise is emphasized in the classroom and in the language laboratory. Prerequisite: [a grade of "C" or better in ITLN 1080 (044.108)] or written consent of department head.

#### ITLN 2090 Speaking in Italian Cr.Hrs.3

(Formerly 044.209) Offers extensive practice in idiomatic spoken language. Grammar review with a focus on oral fluency. Conversation will be based on social, political, and cultural aspects of Italian life. Prerequisite: [a grade of "C" or better in ITLN 1080 (044.108)] or written consent of department head.

#### ITLN 2100 Writing in Italian Cr.Hrs.3

(Formerly 044.210) This course strengthens writing skills in Italian, with special emphasis on the grammatical structure of the Italian language for effective communication. Prerequisite: [a grade of "C" or better in ITLN 1080 (044.108)] or written consent of department head.

#### ITLN 3050 Italian Through Literature Cr.Hrs.3

Through the study of selected works and authors, students will gain a better understanding of Italy's history and culture. Prerequisite: [a grade of "C" or better in ITLN 2080 (044.208)] or [a grade of "C" or better in each of ITLN 2090 (044.209) and ITLN 2100 (044.210)] or written consent of department head.

#### ITLN 3060 Italian Through Film Cr.Hrs.3

The aim of this course is to better understand modern and contemporary Italy, by viewing, meditating upon and discussing those films produced in Italy which most reflect the country, its language and culture, and its literature. Prerequisite: [a grade of "C" or better in ITLN 2080 (044.208)] or [a grade of "C" or better in each of ITLN 2090 (044.209) and ITLN 2100 (044.210)] or written consent of department head.

#### ITLN 3760 Italian Translation Workshop Cr.Hrs.3

(Formerly 044.376) A practical course on translating many types of text from and into Italian, as well as terminology development. Special emphasis on the use of the Internet and other computer-mediated resources. Prerequisite: [a grade of "C" or better in ITLN 2080 (044.208)] or [a grade of "C" or better in each of ITLN 2090 (044.209) and ITLN 2100 (044.210)] or written consent of department head.

#### ITLN 3770 Modern Italian Usage Cr.Hrs.3

(Formerly 044.377) Polish your Italian for business and professional work situations from client relations to terminology, including e-mail and Internet. Course will be customized according to students' professional interests. Prerequisite: [a grade of "C" or better in ITLN 2080 (044.208)] or [a grade of "C" or better in each of ITLN 2090 (044.209) and ITLN 2100 (044.210)] or written consent of department head.

### 8.11.13 Portuguese Course Descriptions

#### PORT 1170 Introductory Portuguese Cr.Hrs.6

(Lab required) A course designed for those with little or no previous knowledge of Portuguese. The course includes grammar, reading and oral practice, with language laboratory exercises. An oral approach is utilized. The student is given glimpses of cultural aspects of Portugal and Brazil. Students with high school Portuguese or its equivalent may not normally take the course for credit.

#### PORT 1282 Intermediate Portuguese Grammar and Conversation 1 Cr.Hrs.3

(Lab required) This course is the first of the intermediate Portuguese language sequence. Focus is on developing intermediate skills in reading, writing, speaking and listening. The primary goals are to build communicative competence and enhance social and cultural awareness of Portugal and Brazil. Not open to students with native oral fluency. Prerequisite: [a grade of "C" or better in PORT 1170] or written consent of instructor or department head.

### 8.12 German and Slavic Studies

**Head:** (Acting) Stephan Jaeger

**Campus Address/General Office:** 328 Fletcher Argue Building

**Telephone:** 204 474 9370

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#### 8.12.1 Program Information,

This department's program covers two European cultural and language groups. German is the official language of five European countries and an understanding of German language and culture is essential to any understanding of European history. Courses are offered in German language, literature and culture. In Slavic Studies, the department offers language, literature and culture courses in Russian, Ukrainian and Polish — the three largest Slavic language groups. The Slavic countries of Eastern Europe exert an important influence on international affairs. In Canada, immigration from both German and Slavic language groups has contributed greatly to the country's cultural mosaic.

#### 8.12.2 German Program Information,

For entry, continuation and graduation requirements for the General Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### General Major Program



For entry to the Major, the prerequisite is a grade of "C" or better in 6 credit hours in German courses at any level. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate, including the higher grade of repeated courses and excluding failed courses.

**Minor (Concentration) Program**

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in 6 credit hours in German.

**Honours Program**

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

**8.12.3 German,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
30 credit hours of German to include: GRMN 1120 <sup>1</sup> GRMN 2100 <sup>2</sup> GRMN 2120 or GRMN 2130 or GRMN 2140 GRMN 3200			
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
6 credit hours in German	12 credit hours in German		
<b>HONOURS SINGLE<sup>5</sup></b>			
<ul style="list-style-type: none"> <li>• 36 credit hours of German (of which at least 24 credit hours must be German courses numbered at the 2000, 3000 or 4000 level to include: GRMN 1120<sup>1</sup> GRMN 2100<sup>2</sup> GRMN 2120 or GRMN 2130 GRMN 2140 GRMN 3200</li> <li>• In years 2 and 3 students must also complete 30 credit hours of ancillary options.</li> </ul>			<ul style="list-style-type: none"> <li>• GRMN 4600<sup>3</sup></li> <li>• GRMN 4570</li> <li>• 6 additional credit hours in German courses numbered at the 4000 level<sup>4</sup></li> <li>• 6 additional credit hours in German courses numbered at the 3000 or 4000 level</li> <li>• 6 credit hours in ancillary options</li> </ul>
<b>HONOURS DOUBLE<sup>5</sup></b>			
<ul style="list-style-type: none"> <li>• 30 credit hours of German (of which at least 18 credit hours must be German courses numbered at the 2000, 3000 or 4000 level) to include: GRMN 1120<sup>1</sup> GRMN 2100<sup>2</sup> GRMN 2120 or GRMN 2130 GRMN 2140 GRMN 3200</li> <li>• In years 2 and 3 students must also complete 6 credit hours of ancillary options and 24 credit hours in second Honours field.</li> </ul>			<ul style="list-style-type: none"> <li>• GRMN 4600<sup>3</sup></li> <li>• GRMN 4570</li> <li>• 3 additional credit hours in German courses numbered at the 4000 level<sup>4</sup></li> <li>• 3 additional credit hours in German courses numbered at the 3000 or 4000 level</li> <li>• 12 credit hours in other Honours field</li> </ul>

**NOTES:**

<sup>1</sup> Students with superior language ability will not be required to complete GRMN 1120 if they complete either GRMN 2100 or GRMN 3200 with a minimum grade of "C".

<sup>2</sup> Students with superior language ability will not be required to complete GRMN 2100 if they complete GRMN 3200 with a minimum grade of "C".

<sup>3</sup> With written consent of department head, students may substitute GRMN 4600 with GRMN 4200.

<sup>4</sup> Students enrolled in the fourth year of the Honours program may be permitted to substitute up to 6 credit hours of graduate level courses.

<sup>5</sup> Honours courses: all 4000 level courses.

**8.12.4 German -1000 Level****GRMN 1120** Beginning German Cr.Hrs.6

(Formerly 008.112) Three hours of lectures, plus one hour each of language lab and conversation per week. The course is intended for students with little or no previous knowledge of German. Basic grammar is included, but emphasis is placed on the development of broad reading and speaking skills. Satisfactory completion of this course enables students to proceed to GRMN 2100 (008.210) or GRMN 2101 (008.210). Students may not hold credit for both GRMN 1120 (008.112) and GRMN 1121 (008.112). Students with Grade 12 German or its equivalent may not normally take the course for credit. Not open to students who have previously obtained credit for GRMN 2100 (008.210) or GRMN 2101 (008.210).

**GRMN 1300** Masterpieces of German Literature in English Translation Cr.Hrs.3

Language of instruction: English. The course introduces students to representative works (prose, poetry, and drama) by German-speaking writers such as Goethe, Kleist, Thomas Mann, Kafka, and Rilke, with an emphasis on the ages of Classicism, Romanticism, and Modernism. Stresses the development of English reading and writing skills. The course is designed for students who have little or no prior knowledge of German literature.

**GRMN 1310** Love in German Culture in English Translation Cr.Hrs.3

Language of instruction: English. An introduction to the discourse and meaning of love through German culture from the Middle Ages to the present; analyzes the expression of different concepts of love (spiritual, courtly, erotic, romantic, sexual, free, same-sex, familial, virtual) in literature and other cultural forms. Stresses the development of English reading and writing skills. The course is designed for students who have little or no prior knowledge of German culture.

**8.12.4 German -2000 Level****GRMN 2100** Intermediate German Cr.Hrs.6

(Formerly 008.210) Grammar review, exercises, development of practical oral skills, conversation and modern usage. Introduction to German poetry and prose. Students may not hold credit for both GRMN 2100 (008.210) and GRMN 2101 (008.210). Prerequisite: [German 40S] or [a grade of "C" or better in GRMN 1120 (008.112) or GRMN 1121 (008.112)] or written consent of department head.

**GRMN 2120** Introduction to German Culture 1 Cr.Hrs.3

Language of instruction: English. An introduction to the culture of contemporary German speaking countries; analyzes literature and other cultural forms since the end of World War I, including the Weimar Republic, the Third Reich and the Holocaust, divided Germany, Re-Unification, and the European Union.

**GRMN 2130** Introduction to German Culture 2 Cr.Hrs.3

Language of instruction: English. An introduction to the culture of the German-speaking countries from the Romans to the end of World War I; analyzes literature and other cultural forms and their relation to the rise of the German Nation in the 19th century and its first "fall" in the 20th century.

**GRMN 2140** Exploring German Literature Cr.Hrs.3

Language of instruction: German. In this intermediate course, we will read and discuss a number of works belonging to different literary genres by major German-speaking authors, such as Kafka, Mann, Brecht, Böll, Grass, Jelinek, Wolf, and others. Activities and assignments in this course will focus on the development of reading competency in different literary genres, the expansion of students' German vocabulary, and the development of German written and oral expression. Prerequisite: [a grade of "C" or better in GRMN 2100 (008.210) or GRMN 2101 (008.210) or GRMN 3200 (008.320) or GRMN 3201 (008.320)] or written consent of department head.

**GRMN 2150** Independent Studies in German Cr.Hrs.3

The content of this class will vary from year to year depending on the needs and interests of instructors and students. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**GRMN 2480** Special Topics in German 1 Cr.Hrs.3

(Formerly 008.248) Topics dealing with German literature and culture. Course content will vary from year to year depending on the interests and needs of students and staff. Prerequisite: [a grade of "C" or better in GRMN 2100 (008.210) or GRMN 2101 (008.210) or GRMN 3200 (008.320) or GRMN 3201 (008.320)] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**8.12.4 German -3000 Level****GRMN 3200** Deutsche Sprachpraxis 1 Cr.Hrs.6

(Formerly 008.320) Modern German usage through conversation, writing and practical exercises; study of contemporary fictional and non-fictional texts and films.



Emphasis on vocabulary and structural and stylistic problems. Students may not hold credit for both GRMN 3200 (008.320) and GRMN 3201 (008.320). Prerequisite: a grade of "C" or better in GRMN 2100 (008.210) or GRMN 2101 (008.210).

**GRMN 3220** Deutsche Sprachpraxis 2 Cr.Hrs.3

Advanced work on various aspects of the German language, involving intensive practice in writing and conversational skills; translation of literary and non-literary materials from and into German; and exercise in stylistic and structural analysis of literary and non-literary German in a variety of registers and contexts. Prerequisite: a grade of "C" or better in GRMN 3200 (008.320) or GRMN 3201 (008.320).

**GRMN 3230** Business German Cr.Hrs.3

An introduction to the contemporary terminology and usage of German in the workplace. Listening, speaking, reading, and writing skills will be developed through a variety of activities. This course also aims at developing cross-cultural awareness. The course prepares the student for the business exam *Zertifikat für den Beruf*. Students may not hold credit for both GRMN 3230 and GRMN 3211 (008.321). Prerequisite: [a grade of "C" or better in GRMN 2100 (008.210) or GRMN 2101 (008.210) or GRMN 3200 (008.320) or GRMN 3201 (008.320)] or written consent of department head.

**GRMN 3240** German Enlightenment and Classicism Cr.Hrs.3

A study of selected texts of the German Enlightenment and Classicism, including works by Lessing, Schiller, Goethe and others; advanced language practise. Prerequisite: [a grade of "C" or better in GRMN 2140] or written consent of department head.

**GRMN 3250** German Romanticism Cr.Hrs.3

Study of selected fairy tales, novellas, letters, poetry and other texts by authors such as Novalis, Tieck, E.T.A. Hoffmann, and Kleist; topics discussed include the relationship between Enlightenment and Romanticism, the role of women, the discovery of the uncanny, the role of the fantastic, and romantic vampires, advanced language practise. Prerequisite: [a grade of "C" or better in GRMN 2140] or written consent of department head.

**GRMN 3260** Representations of the Holocaust Cr.Hrs.3

Language of instruction: German. This course will focus on the literary rendering, including film versions and German memorial culture, of the Holocaust experience by authors from the German-speaking countries, such as Anna Seghers, Jurek Becker, Paul Celan, Max Frisch, Peter Weiss, Ruth Klüger, W.G. Sebald, and others. Students may not hold credit for both GRMN 3260 and GRMN 3262. Prerequisite: [a grade of "C" or better in GRMN 2140] or written consent of department head.

**GRMN 3262** Representations of the Holocaust in English Translation Cr.Hrs.3

Language of instruction: English. This course will focus on the literary rendering, including film versions and German memorial culture, of the Holocaust experience by authors from the German-speaking countries, such as Anna Seghers, Jurek Becker, Paul Celan, Max Frisch, Peter Weiss, Ruth Klüger, W.G. Sebald, and others. Students may not hold credit for both GRMN 3262 and GRMN 3260. Prerequisite: [a grade of "C" or better in a minimum of 30

credit hours of university level coursework] or written consent of department head.

**GRMN 3270** Studies in Contemporary German Cinema Cr.Hrs.3

Language of instruction: English. Studies the major accomplishments of East and West German cinema of the postwar period, as well as cinematic trends since German unification. We will consider questions of narrative, genre, and authorship, examine film's relationship to other media, and focus on the dynamic interaction between film history and social history. Films to be studied include features by prominent directors such as Wolf, Fassbinder, Wenders, von Trotta, Carow, Dörrie, and Tykwer. Prerequisite: [a grade of "C" or better in a minimum of 30 credit hours of university level coursework] or written consent of department head.

**GRMN 3280** Sex, Gender and Cultural Politics in the German-Speaking World Cr.Hrs.3

Language of instruction: German. Explores a wide range of literary and cultural texts that deal with sex and gender in the German-speaking world. Discussion will address topics such as representation of women and men in literature and the social and historical climate in which the literature was and is produced. Students may not hold credit for both GRMN 3280 and GRMN 3282. Prerequisite: [a grade of "C" or better in GRMN 2140] or written consent of department head.

**GRMN 3282** Sex, Gender and Cultural Politics in the German-Speaking World in English Translation Cr.Hrs.3

Language of instruction: English. Explores a wide range of literary and cultural texts that deal with sex and gender in the German-speaking world. Discussion will address topics such as representation of women and men in literature and the social and historical climate in which the literature was and is produced. Students may not hold credit for both GRMN 3282 and GRMN 3280. Prerequisite: [a grade of "C" or better in a minimum of 30 credit hours of university level coursework] or written consent of department head.

**GRMN 3290** History in Literature in German-Speaking Countries Cr.Hrs.3

Analyzes how history is represented and remembered in literature and other genres. The course will focus on the representation of one historical period such as the Weimar Republic or the Nazi Third Reich. Please consult the instructor for details on which historical period as it appears in literature will be considered. Prerequisite: [a grade of "C" or better in GRMN 2140] or written consent of department head.

**GRMN 3390** German Representations of War Cr.Hrs.3

Language of instruction: English. Focuses on representations of war, particularly World War II from a German and European perspective in fiction, historiography, film, photography, and memorial culture. Students may not hold credit for both GRMN 3390 and GRMN 3392. Prerequisite: [a grade of "C" or better in a minimum of 30 credit hours of university level coursework] or written consent of department head.

**GRMN 3392** German Representations of War Cr.Hrs.3

Language of Instruction: German. Focuses on representations of war, particularly World War II from a German and European perspective in fiction, historiography, film, photography, and memorial culture. Students may not hold credit for GRMN 3392 and GRMN 3390. Prerequisite: [a



grade of "C" or better in GRMN 2140] or written consent of department head.

**GRMN 3500** Special Topics in German 1 Cr.Hrs.3  
Language of instruction: German. Topics dealing with German literature and culture. Course content will vary from year to year depending on interests and needs of students and staff. Prerequisite: [a grade of "C" or better in GRMN 2140] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**GRMN 3510** Special Topics in German 2 Cr.Hrs.3  
Language of instruction: English. Topics dealing with German literature and culture. Course content will vary from year to year depending on interests and needs of students and staff. Prerequisite: [a grade of "C" or better in a minimum of 30 credit hours of university level coursework] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**GRMN 3530** Special Topics in Comparative German and Slavic Studies Cr.Hrs.3  
Language of instruction: English. Topics comparing German and Slavic – Ukrainian, Russian, Polish – literatures and cultures. Course is co-taught by a member from the German and one from the Slavic Section. Course content will vary from year to year depending on interests and needs of students and staff. Possible topics include Memory of World War II, Cold War and Post-Cold War, and Modernism. Students may not hold credit for both GRMN 3530 and SLAV 3530 when topic is the same. Prerequisite: [a grade of "C" or better in a minimum of 30 credit hours of university level coursework] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**GRMN 3580** Independent Studies in German Cr.Hrs.3  
The content of this class will vary from year to year depending on the needs and interests of instructors and students. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.12.4 German -4000 Level

**GRMN 4200** Literary and Cultural Theory Cr.Hrs.3  
Language of instruction: English. A survey of the major theoretical approaches to German literatures and cultures. Discusses the aesthetics of Enlightenment and Idealism, Nietzsche, Freud, Prague Structuralism, hermeneutics, semiotics, the Frankfurt School, collective memory, gender studies, and multi-culturalism; application of theories to German literary texts and other cultural examples. Prerequisite: written consent of department head.

**GRMN 4210** Survey of Second Language Acquisition and Methods of Language Teaching in German Cr.Hrs.3  
For advanced undergraduate students with a high proficiency in German who are interested in the learning and teaching of German as a foreign / second language; the course provides a general introduction to theories and approaches in second language acquisition (SLA) and to methods of the teaching of German as a foreign language.

This course is not acceptable for credit in a Bachelor of Education program. Prerequisite: written consent of department head.

**GRMN 4540** Introduction to German Language Structure Cr.Hrs.3

An introduction to the scientific study of the German language and to the role of the language teacher in the examination, analysis, and description of the German language. Topics include grammar, word formation, meaning, sound systems, language acquisition and change, and language in society. Prerequisite: written consent of department head.

**GRMN 4570** Honours Thesis in German Studies Cr.Hrs.3

The Thesis presents the results of an independent research project supervised by a faculty member. Prerequisite: written consent of department head.

**GRMN 4600** Senior Seminar in German Studies Cr.Hrs.3

Language of instruction: German. Introduces basic methodology of German literary and cultural studies (genres, periods, resources, bibliographical methods). Examines German culture during critical periods in German history with specific emphasis on literature. Students work closely with a faculty advisor during the semester and are expected to produce a major research paper. Prerequisite: written consent of department head.

**GRMN 4610** Independent Work Cr.Hrs.3

(Formerly 008.461) Each student will work with an instructor to prepare a reading program in an appropriate area and present written assignments as required. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**GRMN 4640** Special Topics 1 Cr.Hrs.3

(Formerly 008.464) The specific content of this course will vary from year to year. A description of the course is available in advance at the Department Office. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**GRMN 4650** Special Topics 2 Cr.Hrs.3

(Formerly 008.465) The specific content of this course will vary from year to year. A description of the course is available in advance at the Department Office. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.12.5 Russian

8.12.5 Program Information: Slavic Studies - Russian, For entry, continuation and graduation requirements for the General Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### Major Program



For entry to the Major, the prerequisite is a grade of "C" or better in six credit hours from RUSN 1300 (or RUSN 1330), RUSN 2810 (or RUSN 2820). For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the

higher grade of repeated courses and excluding failed courses.

**Minor (Concentration) Program**

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in six credit hours from RUSN 1300 (or RUSN 1330), RUSN 2810 (or RUSN 2820).

**8.12.6 Russian**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL RUSSIAN MAJOR TOTAL: 30 CREDIT HOURS</b>			
6 credit hours from RUSN 1300, RUSN 1330, RUSN 2810 or RUSN 2820	24 credit hours in Russian (RUSN) or Slavic Studies (SLAV) courses of which at least 6 credit hours must be in language courses numbered at the 3000 level		
<b>RUSSIAN MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
6 credit hours from RUSN 1300, RUSN 1330, RUSN 2810 or RUSN 2820	12 credit hours in Russian (RUSN) or Slavic Studies (SLAV) courses		
<b>NOTES:</b> With written consent from the department head, courses offered by other departments may be approved for credit. The following courses count as language courses: RUSN 1300, RUSN 1330, RUSN 2630, RUSN 2810, RUSN 2820, RUSN 2830, RUSN 3200, RUSN 3210, RUSN 3220. The following courses count as literature and culture courses: RUSN 1400, RUSN 2280, RUSN 2290, RUSN 2310, RUSN 2410, RUSN 2740, RUSN 2760, RUSN 3330, RUSN 3580, RUSN 3770, RUSN 3780, RUSN 3790, RUSN 3900, RUSN 3980, SLAV 2240, SLAV 2250, SLAV 2260, SLAV 2270, SLAV 3530, SLAV 3920.			

**8.12.7 Russian 1000 Level**

**RUSN 1300** Introductory Russian Cr.Hrs.6 (Formerly 052.130) Basic grammar, conversation and reading with emphasis on communication skills. Cultural content is introduced through a range of audio-visual materials. Not open to native speakers and students with high school Russian 41G credit. Students may not hold credit for both RUSN 1300 (052.130) and RUSN 1330 (052.133).

**RUSN 1330** Introductory Russian 2 Cr.Hrs.3 (Formerly 052.133) The second term of RUSN 1300 (052.130) Introductory Russian. Intended for students who have already a knowledge of the alphabet and the sound system, as well as elementary comprehension, communication and writing skills equivalent to those that would be achieved in the first term of RUSN 1300 (052.130). Students may not hold credit for both RUSN 1330 (052.133) and RUSN 1300 (052.130). Prerequisite: successful completion of a placement test administered by the department.

**RUSN 1400** Masterpieces of Russian Literature in Translation Cr.Hrs.3  
An introduction to representative works by major Russian writers, with emphasis on key paradigms in literary and socio-political thinking in Russia. Early 19th century to the present. The course is designed for students who have little or no prior knowledge of Russian literature. Lectures and

readings in English. Students may not hold credit for both RUSN 1400 and the former RUSN 2770.

**8.12.7 Russian -2000 Level**

**RUSN 2280** Russian Culture 1 Cr.Hrs.3 (Formerly 052.228) A survey of the Russian cultural heritage from the pre-Christian era to the end of the nineteenth century. Mythology, the arts and literature. Lectures in English. Readings are available in both English translation and in the original.

**RUSN 2290** Russian Culture 2 Cr.Hrs.3 (Formerly 052.229) Russian culture from the end of the 19th century to the present day. Major developments in Russian art, film and literature. Readings are available in both English translation and in the original.

**RUSN 2310** Exploring Russia through Film Cr.Hrs.3  
A survey of Russian cinema from its origins to the present. The course focuses on the role of film in Russian culture,

ideological uses of film, and cinema as a medium of cultural dissent and witness to social change. Lectures in English; all films are in Russian with English subtitles; no prior knowledge of Russian language or culture is required.

**RUSN 2410** Russian Literature after Stalin Cr.Hrs.3  
A survey of Russian literature from the period of High



Stalinism to the present. The course examines effects of ideological and political change on literary production. Lectures in English. Readings in English or in the original.

**RUSN 2630 Russian Language Seminar Abroad Cr.Hrs.3**

(Formerly 052.263) The study of Russian language, literature and culture at an intensive language school in Eastern Europe. Designed for students aiming at near-native fluency. Prerequisite: [a grade of "C" or better in RUSN 1300 (052.130)] and written consent of department head.

**RUSN 2740 Literature and Revolution Cr.Hrs.3**

(Formerly 052.274) Responses to the 1917 Revolution, focusing on writers of the twenties. Mayakovsky, Kollontai, Babel, Olesha, Zamyatin, Pilnyak, Bulgakov. References to art, cinema and cultural politics of the period. Lectures in English.

**RUSN 2760 The Silver Age of Russian Literature Cr.Hrs.3**

(Formerly 052.276) Chekhov, Symbolists, Decadents and Futurists. Reference to the theatre and art of the period. Lectures in English. Readings in the original or in English.

**RUSN 2810 Intermediate Russian Cr.Hrs.6**

(Formerly 052.281) Grammar review, conversation, translation and reading of selected texts. Development of communication skills through practical exercises. Cultural content is introduced through use of audio-visual and internet materials. Students may not hold credit for both RUSN 2810 (052.281) and RUSN 2820 (052.282). Prerequisite: [a grade "C" or better in RUSN 1300 (052.130) or RUSN 1330 (052.133)] or [Russian 41G] or written consent of department head.

**RUSN 2820 Intermediate Russian 2 Cr.Hrs.3**

(Formerly 052.282) The second term of RUSN 2810 (052.281) Intermediate Russian. Intended for students who already have basic comprehension, communication and writing skills equivalent to those that would be achieved in the first term of RUSN 2810 (052.281). Students may not hold credit for both RUSN 2820 (052.282) and RUSN 2810 (052.281). Prerequisite: successful completion of a placement test administered by the department.

**RUSN 2830 Special Topics in Russian Cr.Hrs.3**

A study of the Russian language through listening, reading, writing, and conversation, with a strong cultural component. The content of this course will vary from year to year, depending on the needs and interests of the students and staff. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.12.7 Russian -3000 Level

**RUSN 3200 Advanced Russian 1 Cr.Hrs.3**

Advanced composition, translation, reading and study of selected literary and other texts. Development of overall communication skills. Students may not hold credit for both RUSN 3200 and the former RUSN 3930 (052.393). Prerequisite: [a grade "C" or better in RUSN 2810 (052.281) or RUSN 2820 (052.282)] or written consent of department

head.

**RUSN 3210 Advanced Russian 2 Cr.Hrs.3**

Continues RUSN 3200. Further work in advanced composition, translation, reading and study of selected literary and other texts. Development of overall communication skills. Students may not hold credit for RUSN 3210 and any of: the former RUSN 3930 (052.393) or the former RUSN 3940 (052.394). Prerequisite: [a grade "C" or better in RUSN 3200] or written consent of department head.

**RUSN 3220 Selected Topics in Russian Cr.Hrs.3**

Language of instruction: Russian. Advanced study of the Russian language through reading and analysis of literary or/and non-fictional texts including academic writing. The content of this course will vary from year to year, depending on the needs and interests of instructors and students. Prerequisite: [a grade "C" or better in one of: RUSN 2810 (052.281), RUSN 2820 (052.282), RUSN 3200, RUSN 3210, the former RUSN 3930 (052.393), the former RUSN 3940 (052.394)] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**RUSN 3330 Chekhov Cr.Hrs.3**

(Formerly 052.333) The study of selected short stories and plays. Lectures in English. Readings are available in both Russian and English translation.

**RUSN 3580 Russian Poetry Cr.Hrs.3**

(Formerly 052.358) A study of major Russian poetry of the 19th and 20th centuries, including works by Pushkin, Lermontov, Tiutchev, Fet, Blok, Mayakovsky, Akhmatova, Esenin, Evtushenko, Vinokurov, Kazakova. Lectures and readings in Russian. Prerequisite: [a grade of "C" or better in one of: RUSN 3200 or RUSN 3210 or the former RUSN 3930 (052.393) or the former RUSN 3940 (052.394)] or written consent of department head.

**RUSN 3780 Dostoevsky Cr.Hrs.3**

(Formerly 052.378) A study that focuses on the writer's art, in particular on his development of the polyphonic novel. Lectures in English. Readings in the original or in English.

**RUSN 3790 Special Studies Cr.Hrs.3**

(Formerly 052.379) The content of this course will vary from year to year, depending on the needs and interests of instructors and students. A description of the course is available in advance at the department office. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**RUSN 3900 Tolstoy's War and Peace Cr.Hrs.3**

(Formerly 052.390) This writer's art, view of history and human nature. References to film versions. Lectures in English. Readings in the original or in English.

**RUSN 3980 Women and Russian Literature Cr.Hrs.3**

(Formerly 052.398) A study of the literature produced by Russian women writers in the nineteenth and early twentieth centuries, including an examination of key issues raised in works by writers such as Bunina, Durova, Volkonskaia, Pavlova, Guro, Gippius, Forsh, Akhmatova, Tsvetaeva, and Chukovskaia. Lectures in English. Readings in the original



and/or in English.

[for the B.A. General, Advanced and Honours Degree Programs.](#)

### 8.12.7 Russian -4000 Level

#### RUSN 4620 Selected Topics 1 Cr.Hrs.3

(Formerly 052.462) A program of independent reading and/or research on selected topics to 1900, undertaken by a student in consultation with his or her prospective instructor. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

#### RUSN 4630 Selected Topics 2 Cr.Hrs.3

(Formerly 052.463) A program of independent reading and/or research on selected topics from the twentieth century, undertaken by a student in consultation with his/her prospective instructor. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.12.8 Ukrainian

#### 8.12.8 Program Information: Slavic Studies - Ukrainian,

For entry, continuation and graduation requirements for the General Degree, see [Section 3: Basic Faculty Regulations](#)

#### General Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in six credit hours from UKRN 1310 (or UKRN 1320), UKRN 2720 (or UKRN 2730). For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

#### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in six credit hours from UKRN 1310 (or UKRN 1320), UKRN 2720 (or UKRN 2730).

### 8.12.9 Ukrainian

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL UKRAINIAN MAJOR TOTAL: 30 CREDIT HOURS</b>			
6 credit hours from UKRN 1310, UKRN 1320, UKRN 2720 or UKRN 2730	24 credit hours in Ukrainian (UKRN) or Slavic Studies (SLAV) courses of which at least 6 credit hours must be in language courses numbered at the 3000 level		
<b>UKRAINIAN MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
6 credit hours from UKRN 1310, UKRN 1320, UKRN 2720 or UKRN 2730	12 credit hours in Ukrainian (UKRN) or Slavic Studies (SLAV) courses of which at least 3 credit hours must be in literature/culture		
<b>NOTES:</b> With written consent from the department head, courses offered by other departments may be approved for credit. The following courses count as language courses: UKRN 1230, UKRN 1310, UKRN 1320, UKRN 2260, UKRN 2720, UKRN 2730, UKRN 3700, UKRN 3950, UKRN 3960. The following courses count as literature and culture courses: UKRN 2100, UKRN 2200, UKRN 2410, UKRN 2590, UKRN 2770, UKRN 2780, UKRN 2800, UKRN 2820, UKRN 3100, UKRN 3300, UKRN 3440, UKRN 3840, UKRN 3880, UKRN 3910, UKRN 3970, SLAV 2240, SLAV 2250, SLAV 2260, SLAV 2270, SLAV 3530, SLAV 3920.			

### 8.12.10 Ukrainian -1000 Level

#### UKRN 1230 Language Seminar in Ukraine

1 Cr.Hrs.3

(Formerly 052.123) The study of Ukrainian language at an intensive language school in Ukraine. The course is designed for students aiming at near-native fluency. Prerequisite: [a grade of "C" or better in UKRN 1310 (052.131) (or its equivalent)] and written consent of department head.

#### UKRN 1310 Introductory Ukrainian Cr.Hrs.6

(Formerly 052.131) Basic grammar, conversation, composition and reading. Emphasis is placed on

communication skills. Cultural content is introduced through a range of audio-visual materials. Not open to native speakers and students with Ukrainian 40S credit. Students may not hold credit for both UKRN 1310 (052.131) and UKRN 1320 (052.132).

#### UKRN 1320 Introductory Ukrainian 2 Cr.Hrs.3

(Formerly 052.132) This course is the second term of UKRN 1310 (052.131) Introductory Ukrainian, and is intended for students who already have a knowledge of the alphabet and the sound system and elementary oral comprehension and reading, writing, and speaking skills equivalent to those that would be achieved in the first term of UKRN 1310 (052.131). Students may not hold credit for both UKRN 1320 (052.132) and UKRN 1310 (052.131). Prerequisite: successful



completion of a placement test administered by the department.

### 8.12.10 Ukrainian -2000 Level

**UKRN 2100** Exploring Ukrainian Literature Cr.Hrs.3  
Language of Instruction: Ukrainian. An introduction to Ukrainian literature that simultaneously helps students improve their language skills. This is a transitional course that builds upon a basic reading knowledge. A number of works by major authors and from different genres are discussed. Activities and assignments focus on developing reading competency, vocabulary, written and oral expression. Prerequisite: [a grade of "C" or better in UKRN 2720 (052.272) or UKRN 2730 (052.273) or UKRN 3950 (052.395) or UKRN 3960 (052.396)] or written consent of department head.

### UKRN 2200

Ukrainian Myth, Rites and Rituals Cr.Hrs.3

An exploration of folk mythology, and the rites, rituals and festivals associated with the calendar cycle. Lectures and readings in English. Students may not hold credit for UKRN 2200 and any of: the former UKRN 2510 (052.251) or the former UKRN 2520 (052.252).

### UKRN 2260

Ukrainian Culture Seminar Abroad Cr.Hrs.3

(Formerly 052.226) This course is offered as part of the Summer Session. It is a study experience in Ukraine. The course features extensive exploration of contemporary Ukrainian culture. The course is taught in English. Students are given the maximum individual attention. Mornings are spent in class. Excursions are planned in Kyiv and neighboring sites. Prerequisite: [a grade of "C" or better in UKRN 1310 (052.131) (or its equivalent)] and written consent of the department head.

### UKRN 2410

Ukrainian Canadian Cultural Experience Cr.Hrs.3

A study of the legacy left by several generations of Ukrainian Canadians in literature and the performing arts, music, art and architecture, with particular attention to the construction of identity and the critique of culture. Lectures and readings in English. Students may not hold credit for both UKRN 2410 and the former UKRN 2420 (052.242).

**UKRN 2590** Ukrainian Literature and Film Cr.Hrs.3  
(Formerly 052.259) An examination of the relationship of Ukrainian literature and film. Students read literary works which have inspired films and analyze the unique formal qualities of each. The course considers the stylistic influence of film on literature and vice versa; the relationship between writer and director, especially in the case where they are one and the same person. Readings in the original and/or in English. Films in Ukrainian with English subtitles or plot summaries.

**UKRN 2720** Intermediate Ukrainian Cr.Hrs.3  
(Formerly 052.272) Grammar review, conversation, translation and reading of selected texts. Development of communication skills through practical exercises. Cultural content is introduced through audio-visual materials.

Students may not hold credit for both UKRN 2720 (052.272) and UKRN 2730 (052.273). Prerequisite: [a grade of "C" or better in UKRN 1310 (052.131) or UKRN 1320 (052.132)] or [Ukrainian 40S] or written consent of department head.

**UKRN 2730** Intermediate Ukrainian 2 Cr.Hrs.3  
(Formerly 052.273) This course is the second term of UKRN 2720 (052.272) Intermediate Ukrainian, and is intended for students who already have basic oral comprehension and reading, writing, and speaking skills equivalent to those that would be achieved in the first term of UKRN 2720 (052.272). Students may not hold credit for both UKRN 2730 (052.273) and UKRN 2720 (052.272). Prerequisite: successful completion of a placement test administered by the department.

**UKRN 2770** Ukrainian Culture 1 Cr.Hrs.3  
(Formerly 052.277) A survey that examines the Ukrainian Culture Heritage from the pre-Christian era, through medieval times and the baroque to the end of the 19th century. Issues in mythology, religion, the arts and literature are discussed. Lectures in English. Readings are available in both English translation and the original.

**UKRN 2780** Ukrainian Culture 2 Cr.Hrs.3  
(Formerly 052.278) Major trends in thought, the visual arts, film and literature from the end of the 19th century to the present day. Lectures in English. Readings are available in both English translation and Ukrainian.

**UKRN 2800** Literature and Revolution in Ukraine Cr.Hrs.3  
A study of literature and its relationship to the arts in the decade that followed the Revolution of 1917. Lectures in English. Readings available in English and in the original. Viewing and discussion of films.

**UKRN 2820** Holodomor and Holocaust in Ukrainian Literature and Culture Cr.Hrs.3  
A study of how the Holodomor (Famine) of 1932-33 and the Holocaust have been represented, and of the international impact of these representations. References to art and film. Lectures and readings in English.

### 8.12.10 Ukrainian -3000 Level

**UKRN 3100** Ukrainian Story Writing Through the Ages Cr.Hrs.3  
Masterpieces of the short story genre from early modern times to the present. Focusing on great works and writers, the course provides insights into the genre and into different periods in Ukrainian literature. Film adaptations of some works will be viewed and discussed. Students may not hold credit for both UKRN 3100 and the former UKRN 3850 (052.385).

**UKRN 3300** Literature of Independent Ukraine Cr.Hrs.3  
A study of recent writings from Ukraine, focusing on the post-1991 period. References to art and film of the period.

**UKRN 3440** Ukrainian Poetry Cr.Hrs.3  
A study of some of the best Ukrainian poetry with a particular emphasis on the modern period. Lectures and readings in Ukrainian. Prerequisite: [a grade of "C" or better in UKRN



1310 (052.131)] or written consent of department head.

**UKRN 3840** Ukrainian Novel Cr.Hrs.3  
(Formerly 052.384) A study of representative novels of the 19th and 20th centuries. The course begins with the Romantic period and ends with contemporary writing. Lectures in English. Readings in the original or in English.

**UKRN 3850** Ukrainian Short Story Cr.Hrs.3  
(Formerly 052.385) A study of representative short stories which begins with the ethnographic concerns of early 19th-century writers and ends with the formal experimentation of contemporaries. Lectures in English. Readings in the original and in English.

**UKRN 3880** Special Studies Cr.Hrs.3  
(Formerly 052.388) The content of this course will vary from year to year, depending on the needs and interests of instructors and students. A description of the course is available in advance at the department office. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**UKRN 3910** Shevchenko Cr.Hrs.3  
(Formerly 052.391) A study of the greatest works, focusing on the writer's intellectual and artistic development. References to his art and the imperial context. Lectures in English. Readings in the original. Prerequisite: [a grade of "C" or better in UKRN 1310 (052.131)] or written consent of department head.

**UKRN 3950** Advanced Ukrainian 1 Cr.Hrs.3  
(Formerly 052.395) Advanced composition, translation, readings and study of selected literary and other texts. Development of oral and comprehension skills through study of contemporary film, television and other audio-visual materials. Prerequisite: [a grade of "C" or better in UKRN 2720 (052.272) or UKRN 2730 (052.273)] or written consent of department head.

**UKRN 3960** Advanced Ukrainian 2 Cr.Hrs.3  
(Formerly 052.396) A continuation of UKRN 3950 (052.395) Advanced Ukrainian 1. Continued work in advanced composition, translation, readings and study of selected literary and other texts. Continued development of oral and comprehension skills through study of contemporary film, television and other audio-visual materials. Prerequisite: [a

grade of "C" or better in UKRN 3950 (052.395)] or written consent of department head.

**UKRN 3970** Women and Ukrainian Literature Cr.Hrs.3  
(Formerly 052.397) A study of the literature produced by Ukrainian women writers in the nineteenth and early twentieth centuries, including an examination of key issues raised in works by writers such as Vovchok, Pchilka, Kobrynska, Ianovska, Kobylanska, Iaroshynska, and Ukrainka. Lectures in English. Readings in the original and/or in English.

### 8.12.10 Ukrainian -4000 Level

**UKRN 4640** Selected Topics 1 Cr.Hrs.3  
(Formerly 052.464) A program of independent reading and/or research on selected topics to 1900, undertaken by a student in consultation with his or her prospective instructor. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**UKRN 4650** Selected Topics 2 Cr.Hrs.3  
(Formerly 052.465) A program of independent reading and/or research on selected topics from the twentieth century, undertaken by a student in consultation with his/her prospective instructor. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.12.11 Polish

8.12.11 Program Information: Slavic Studies - Polish, For entry, continuation and graduation requirements for the General Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in POL 1890.

#### 8.12.12 Polish

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>POLISH MINOR (CONCENTRATION)<sup>1</sup> TOTAL: 18 CREDIT HOURS</b>			
POL 1890	POL 2890	6 credit hours from the following Polish/Slavic Studies courses: POL 1900, POL 2600, POL 2610, POL 2660, POL 2690, POL 3890, SLAV 2260, SLAV 2270	

#### NOTES:

<sup>1</sup> Students entering university with a knowledge of Polish, but without Grade 12 standing, may be granted written permission by the department head to enter POL 2890.

**8.12.13 Polish -1000 Level**

**POL 1890** Introductory Polish Cr.Hrs.6  
(Formerly 052.189) Basic grammar, conversation, composition, readings, language laboratory sessions.

**POL 1900** Love, Heroes and Patriotism in Contemporary Poland Cr.Hrs.3

A study of the impact of Romanticism on contemporary Polish national consciousness, images of love, and the role of art and the artist in society. The course explores diverse written and visual sources representing Polish and European Romanticism and its mutual influences. Lectures and readings in English.

**8.12.13 Polish -2000 Level**

**POL 2600** Polish Culture until 1918 Cr.Hrs.3  
An introductory survey from the beginnings of the Polish state to 1918. This is a lecture style course devoted to studying the achievements of Polish culture and their impact on world culture. Students will observe the creation of Polish national identity through the examination of documents from literature and culture. Lectures and readings in English. Students may not hold credit for both POL 2600 and the former POL 2530 (052.253).

**POL 2610** Polish Culture 1918 to the Present Cr.Hrs.3

An introductory survey from 1918 to the present. This is a lecture style course devoted to studying the achievements of Polish culture and their impact on shaping of the contemporary Polish society. Students will observe the cultural changes that defined Poland following one hundred years of non-existence as a nation. The re-examining of the Polish national identity will be studied through documents from literature, art, mythology and music. Lectures and readings in English. Students may not hold credit for both POL 2610 and the former POL 2530 (052.253).

**POL 2660** Special Topics in Polish Literature and Culture Cr.Hrs.3

Topics dealing with Polish literature and culture. Content of this course will vary from year to year, depending on the needs and interests of instructors and students. As the course content will vary from year to year, students may take this course more than once for credit.

**POL 2690** Polish Language and Culture Cr.Hrs.6  
(Formerly 052.269) Offered as part of the Summer Session, this course is a study experience in Poland. The program features practical language training and an exploration of the Polish culture. Prerequisite: written consent of instructor.

**POL 2890** Intermediate Polish Cr.Hrs.6  
(Formerly 052.289) Grammar review, composition, translation, readings of selected prose and poetry. Prerequisite: [a grade of "C" or better in POL 1890 (052.189)] or written consent of department head.

**8.12.13 Polish -3000 Level**

**POL 3890** Advanced Polish Cr.Hrs.6  
(Formerly 052.389) Syntax, advanced composition, readings and study of selected prose and poetry. Prerequisite: [a grade of "C" or better in POL 2890 (052.289)] or written consent of department head.

**8.12.14 Slavic Studies-General -2000 Level**

**SLAV 2240** East European Literature 1 Cr.Hrs.3  
(Formerly 052.224) Influential authors and works by Jewish, Polish, Russian, Ukrainian and other authors in English translation up to and including the nineteenth century.

**SLAV 2250** East European Literature 2 Cr.Hrs.3  
(Formerly 052.225) Celebrated and influential works of Jewish, Polish, Russian, Ukrainian and other literatures that describe the East European experience in English translation from the late nineteenth century to the present.

**SLAV 2260** Russia, Ukraine and Poland - Cultures in Dialogue 1 Cr.Hrs.3

Key issues in the cultural heritages of the three largest Slavic nations. Particular attention is paid to the way each culture has represented itself and the other two in literature and the arts. Students will examine the way cultural myths have been formed, challenged and modified. Early times to the late 19th century. Lectures and readings in English.

**SLAV 2270** Russia, Ukraine and Poland - Cultures in Dialogue 2 Cr.Hrs.3

Key issues in the cultural heritages of the three largest Slavic nations. Particular attention is paid to the way each culture has represented itself and the other two in literature and the arts. Students will examine the way cultural myths have been formed, challenged and modified. Late 19th century to the present. Lectures and readings in English.

**8.12.14 Slavic Studies-General -3000 Level**

**SLAV 3530** Special Topics in Comparative German and Slavic Studies Cr.Hrs.3  
Language of instruction: English. Topics comparing German and Slavic – Ukrainian, Russian, Polish – literatures and cultures. Course is co-taught by a member from the German and one from the Slavic Section. Course content will vary from year to year depending on interests and needs of students and staff. Possible Topics include Memory of World War II, Cold War and Post-Cold War, and Modernism. Students may not hold credit for both SLAV 3530 and GRMN 3530 when topic is the same. Prerequisite: [a grade of "C" or better in a minimum of 30 credit hours of university level coursework] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**SLAV 3920** Gogol Cr.Hrs.3

(Formerly 052.392) A study of the author's major fiction and his influence on Russian and Ukrainian cultures and identity politics.



### 8.12.15 Hungarian Course Descriptions

**HUNG 1000** Introduction to Hungarian 1 Cr.Hrs.3 (Lab required) The course is intended for students with little or no previous knowledge of Hungarian. Students are introduced to basic grammar and vocabulary as well as aspects of Hungarian culture. Emphasis is placed on communication skills. Satisfactory completion of this course enables students to proceed to HUNG 1002 Introduction to Hungarian 2.

**HUNG 1002** Introduction to Hungarian 2 Cr.Hrs.3 (Lab required.) The course is intended for students with some elementary knowledge of Hungarian. Students will expand their understanding of basic grammar and vocabulary, as well as aspects of Hungarian culture. Emphasis is placed on communication skills. Prerequisite: [a grade of "C" or better in HUNG 1000] or written consent of department head.

The departments of Anthropology, Economics, History, Political Studies and Sociology collaborate in a Major and Advanced Major that explores change in social, economic, political and international relations that have re-shaped and continue to re-shape the world. The public and private sectors, as well as non-governmental agencies, must understand the global forces that affect their international relationships as well as those that affect their internal ability to respond to restructuring forces around them.

For entry to the Major, the prerequisite is a grade of "C" or better in any 12 credit hours from the following: ECON 1010 and ECON 1020, or ECON 1210 and ECON 1220, or the former ECON 1200; SOC 1200; (no more than 6 credit hours from) POLS 1000, POLS 1010, POLS 1040, POLS 1070, POLS 1500; (no more than 6 credit hours from) HIST 1370, HIST 1380, HIST 1500, HIST 2380, HIST 2720.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### 8.13 Global Political Economy Program

**Program Coordinator:** Mark Hudson  
**Program Office:** 333 Isbister Building  
**Telephone:** 204 272 1655  
**E-mail:** [HUDSONM@CC.UMANITOBA.CA](mailto:HUDSONM@CC.UMANITOBA.CA)  
**Website:** [UMANITOBA.CA/GLOBAL\\_POLITICAL\\_ECONOMY/](http://UMANITOBA.CA/GLOBAL_POLITICAL_ECONOMY/)

**Note:** Students who declare and complete a Major will not be required or allowed to complete a separate field for a Minor for purposes of satisfying degree requirements.

#### 8.13.1 Program Information,

#### 8.13.2 Global Political Economy,

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 60 CREDIT HOURS</b>			
<ul style="list-style-type: none"> <li>• Anthropology: ANTH 2000; ANTH 2530; ANTH 3320 or Sociology SOC 3810</li> <li>• Economics: ECON 1010 and ECON 1020, or ECON 1210 and ECON 1220; ECON 2540; ECON 2550; ECON 2630 or ECON 3392 and ECON 3394</li> <li>• History: 12 credit hours from: HIST 1370, HIST 1380, HIST 1500, HIST 2380, HIST 2720</li> <li>• Political Studies: 6 credit hours from: POLS 1000, POLS 1010, POLS 1040, POLS 1070, POLS 1500; POLS 2040</li> <li>• Sociology: SOC 1200; SOC 3380 or SOC 3838 or SOC 3840 or SOC 3890 or Anthropology ANTH 2500; SOC 3810 or Anthropology ANTH 3320</li> </ul>			
<b>ADVANCED MAJOR TOTAL: 78 CREDIT HOURS</b>			
<ul style="list-style-type: none"> <li>• Anthropology: ANTH 2000; ANTH 2530; ANTH 3320 or Sociology SOC 3810; ANTH 3750</li> <li>• Economics: ECON 1010 and ECON 1020, or ECON 1210 and ECON 1220; ECON 2540; ECON 2550; ECON 2630 or ECON 3392 and ECON 3394</li> <li>• Global Political Economy: GPE 2700; GPE 4700</li> <li>• History: 12 credit hours from: HIST 1370, HIST 1380, HIST 1500, HIST 2380, HIST 2720</li> <li>• Political Studies: 6 credit hours from: POLS 1000, POLS 1010, POLS 1040, POLS 1070, POLS 1500; POLS 3220; POLS 3250 or POLS 3840</li> <li>• Sociology: SOC 1200; SOC 2290; SOC 3380 or SOC 3838 or SOC 3840 or SOC 3890 or Anthropology ANTH 2500; SOC 3810 or Anthropology ANTH 3320</li> </ul>			



**List of Courses for Global Political Economy**

Anthropology		
ANTH 2000	Culture, Society, and Power (B)	3
ANTH 2390*	Social Organization in Cross-Cultural Perspective (B)	6
ANTH 2500	Culture, Environment, and Technology (B)	3
ANTH 2530	Anthropology of Political Systems (B)	3
ANTH 3320	Women in Cross-Cultural Perspective (B)	3
ANTH 3750	Globalization and the World-System (B)	3
Economics		
ECON 1010	Introduction to Microeconomic Principles	3
ECON 1020	Introduction to Macroeconomic Principles	3
ECON 1200*	Principles of Economics	6
ECON 1210	Introduction to Canadian Economic Issues and Policies	3
ECON 1220	Introduction to Global and Environmental Economic Issues and Policies	3
ECON 2540	Political Economy 1: Production and Distribution	3
ECON 2550	Political Economy 2: Economic Growth and Fluctuations in a Global Economic Environment	3
ECON 2630	An Introduction to the World's Economies	6
ECON 3392	An Introduction to Development Economics	3
ECON 3394	Development Economics: Problems and Policies	3
Global Political Economy		
GPE 2700	Perspectives on Global Political Economy	3
GPE 4700	Studies in Global Political Economy	6
History		
HIST 1370	An Introduction to Modern World History: 1500-1800 (M)	3
HIST 1380	An Introduction to Modern World History: 1800 - Present (M)	3
HIST 1500	An Introduction to Modern World History: 1500 - Present (M)	6
HIST 2380	The Twentieth-Century World (G,M)	6
HIST 2720	The World Since 1945 (G,M)	6
Political Studies		
POLS 1000	Democracy and Development	3
POLS 1010	Political Ideas and Ideologies	3
POLS 1040	Global Political Issues	3
POLS 1070	Law, Politics, and Power in Canada	3
POLS 1500	Introduction to Politics	6
POLS 2040	Introduction to International Relations	6
POLS 2530*	Elements of Foreign Policy	6
POLS 3220	Globalization and the World Economy	3
POLS 3250	International Political Economy	3
019.383*	The Politics of International Economic Relations	6
Sociology		
SOC 1200	Introduction to Sociology	6
SOC 2290	Introduction to Research Methods	6
SOC 3380	Power, Politics and the Welfare State	3
SOC 3470*	Political Sociology	3
SOC 3690*	Sociology of the Developing Societies	3
SOC 3810	Sociological Perspectives on Gender and Sexuality	3
SOC 3838	Ecology and Society	3
SOC 3840	Community and Social Reconstruction	3
SOC 3870*	Social Inequality	3
SOC 3890	Power and Inequality in Comparative Perspective	3

**List of Suggested Electives**

**Faculty of Arts**

Anthropology		
ANTH 1220	Cultural Anthropology (A)	3
ANTH 1520	Critical Cultural Anthropology (A)	3
ANTH 2460*	Peasantry in a Changing World (B)	3
ANTH 2500	Culture, Environment, and Technology (B)	3
ANTH 2510	Anthropology of Economic Systems (B)	3
ANTH 2570	Urban Anthropology (B)	3
ANTH 3320	Women in Cross-Cultural Perspective (B)	3
ANTH 3380	Anthropology and Contemporary Social Issues (B)	3
076.244*	Peasant Society and Culture (B)	3



Asian Studies		
ASIA 1420	Asian Civilizations to 1500 (Cross-listed with History HIST 1420)	3
ASIA 1430	Asian Civilizations Since 1500 (Cross-listed with History HIST 1430)	3
ASIA 2070*	South Asian Civilization	6
ASIA 2080	South Asian Civilization	3
150.211*	East Asian Civilization	6
Economics		
ECON 2420	Economics of the Labour Process and Labour Relations (Cross-listed with Labour Studies LABR 2420)	3
ECON 2490	Economic Accounting	3
ECON 2560	Corporations in the Global Economy	3
ECON 2630	An Introduction to the World's Economies	6
ECON 3390	Development Economics	6
ECON 3660	Economic Ideas and Social Institutions	6
ECON 3710	Sustainable Development: Issues and Policy	3
ECON 4510*	Economy and State in a Modern Period: Western Europe and North America	6
History		
HIST 2670	History of Capitalism (M)	3
HIST 2680	History of Socialism from the French Revolution to the Present (M)	3
HIST 2710	Women in History (G)	6
HIST 3580	Topics in Recent World History 1 (M)	3
HIST 3590	Topics in Recent World History 2 (M)	3
HIST 4010	Imperialism, Decolonization and Neo-Colonialism, 1700 to the Present (G,M)	6
HIST 4320	Studies in World History since 1945 (G,M)	3
011.341*	The British Empire and Commonwealth Since 1815 (G)	6
Labour Studies		
LABR 1260	Working for a Living	3
LABR 1270*	Introduction to the Political Economy of Labour	3
LABR 1290	Introduction to the Canadian Labour Movement	3
LABR 2100	Political Economy of Labour	3
LABR 2300	Workers, Employers and the State	3
LABR 2420	Economics of the Labour Process and Labour Relations (Cross-listed with Economics ECON 2420)	6
LABR 3090	Globalization and Labour	3
Political Studies		
POLS 2040	Introduction to International Relations	6
POLS 2070	Introduction to Canadian Government	6
POLS 2530	Elements of Foreign Policy	6
POLS 3200	International Security and Conflict Management	6
POLS 3330	Politics of the European Union	3
POLS 3810	Introduction to Marxism	3
POLS 3880	Comparative Foreign Policy	3
POLS 4530	Regionalism in International Politics	3
POLS 4660	The State in the Economy	6
019.156*	Introduction to Canadian Government	6
019.273*	International Conflict Resolution	6
Sociology		
SOC 2480	Population Problems	3
SOC 3380	Power, Politics and the Welfare State	3
SOC 3470*	Political Sociology	3
SOC 3690*	Sociology of the Developing Societies	3
SOC 3810	Sociological Perspectives on Gender and Sexuality	3
SOC 3838	Ecology and Society	3
SOC 3840	Community and Social Reconstruction	3
SOC 3870*	Social Inequality	3
SOC 3890	Power and Inequality in Comparative Perspective	3
<b>Clayton H. Riddell Faculty of Environment, Earth, and Resources</b>		
Geography		
GEOG 1280	Introductory Human Geography	3
GEOG 2210	Economic Geography	6
GEOG 3590	Geography of Developing Countries	6
GEOG 3800	Geography of Transportation Development	3
GEOG 4640	Models in Urban Geography	3

\* Indicates course no longer offered.



### 8.13.3 Global Political Economy

#### GPE 2700 Perspectives on Global Political Economy Cr.Hrs.3

(Formerly 157.270) An interdisciplinary seminar exploring issues in political economy at the global level from the perspectives of Anthropology, History, Economics, Political Studies, and Sociology. Prerequisite: written consent of Global Political Economy coordinator.

#### GPE 4700 Studies in Global Political Economy Cr.Hrs.3

(Formerly 157.470) An advanced interdisciplinary seminar that will study the effects of institutions, structures, and dynamics operating in the current global political economy. Students, working in groups, will be expected to do case studies on selected local (or regional) political economies. Prerequisite: written consent of Global Political Economy coordinator.

## 8.14 Department of History

**Head:** Mark Gabbert

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**Telephone:** 204 474 8401

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**Website:** [umanitoba.ca/history](http://umanitoba.ca/history)

### 8.14.1 Program Information

The study of history provides essential background for many disciplines and professions where research analysis, communications skills and an understanding of how past events influence the present are important. The department includes specialists in intellectual, cultural, social, medieval, Aboriginal, women's, and international history. A particular area of departmental specialization is Canadian and western Canadian history.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in the first six credit hours of History. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses

including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

When selecting 2000-level courses in Year 2, students should anticipate their future interests.

#### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in the first six credit hours of History.

#### Honours Program

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

In addition, students are to have a grade point average of 3.0 or better in all History courses completed before admission.

To continue in the Honours program a 3.0 grade point average, with minimum grades of "B" in all 3000- and 4000-level History courses, must be maintained. Normally, students who fail to maintain a minimum grade of "B" in all 3000- and 4000-level courses will be required to withdraw from the Honours program.

It is recommended that students complete History HIST 4400 or HIST 4580 in Year 4 if they intend to do graduate work.

#### Other

At most, 12 credit hours at the 1000-level in History may count for a B.A. General, B.A. Advanced, or B.A. Honours Degree credit.

Courses ANTH 2360 offered by the Department of Anthropology, and CLAS 2140, CLAS 2150, CLAS 2160 and CLAS 2170 offered by the Department of Classics count for credit towards a General Major, Advanced Major, Honours Single or Honours Double in History, CLAS 2140, CLAS 2150, CLAS 2160 and CLAS 2170 also count for credit towards a Minor (Concentration) in History.

### 8.14.2 History

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
6 credit hours in History courses numbered at the 1000	12 credit hours in History courses numbered at the 2000	• 6 credit hours in History courses numbered at the 3000	



or 2000 level  <b>or</b> 3 credit hours in History courses numbered at the 1000 level and 3 credit hours in History courses numbered at the 2000 level	level	level  • 6 credit hours in History courses numbered at the 2000 or 3000 level	
		Within the 30 credit hours, students must choose 6 credit hours from each of 3 different areas of study.	
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
6 credit hours in History courses numbered at the 1000 or 2000 level  <b>or</b> 3 credit hours in History courses numbered at the 1000 level and 3 credit hours in History courses numbered at the 2000 level	18 credit hours in History courses numbered at the 2000 level	18 credit hours in History courses numbered at the 3000 level,  <b>or</b> 12 credit hours in History courses numbered at the 3000 level and 6 credit hours in History courses numbered at the 2000 level,  <b>or</b> 12 credit hours in History courses numbered at the 3000 level and 6 credit hours in History courses numbered at the 4000 level	6 credit hours in History courses numbered at the 4000 level
		Within the 48 credit hours, students must choose 6 credit hours from each of 3 different areas of study.	
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
6 credit hours in History courses numbered at the 1000 or 2000 level  <b>or</b> 3 credit hours in History courses numbered at the 1000 level and 3 credit hours in History courses numbered at the 2000 level	6 credit hours in History courses numbered at the 2000 level	6 credit hours in History courses numbered at the 2000 or 3000 level	
<b>HONOURS SINGLE<sup>1, 3</sup></b>			
6 credit hours in History courses numbered at the 1000 or 2000 level  <b>or</b> 3 credit hours in History courses numbered at the 1000 level and 3 credit hours in History courses numbered at the 2000 level	• 18 credit hours in History courses numbered at the 2000 level  <b>or</b> 12 credit hours in History courses numbered at the 2000 level and 6 credit hours in History courses numbered at the 3000 level  • 12 credit hours in ancillary options	• HIST 3990  • 6 credit hours in History courses numbered at the 3000 level  • 12 credit hours in ancillary options	24 credit hours in History courses numbered at the 4000 level
		Honours students must choose from a minimum of three different defined areas of historical study.	
<b>HONOURS DOUBLE<sup>1, 2, 3</sup></b>			



6 credit hours in History courses numbered at the 1000 or 2000 level	<ul style="list-style-type: none"> <li>• 12 credit hours in History courses numbered at the 2000 level</li> </ul>	<ul style="list-style-type: none"> <li>• HIST 3990</li> <li>• 6 credit hours in History courses numbered at the 3000 level</li> <li>• 12 credit hours in other Honours field</li> </ul>	<ul style="list-style-type: none"> <li>• 12 credit hours in History courses numbered at the 4000 level</li> <li>• 12 credit hours in other Honours field</li> </ul>
or 3 credit hours in History courses numbered at the 1000 level and 3 credit hours in History courses numbered at the 2000 level	<ul style="list-style-type: none"> <li>• or 6 credit hours in History courses numbered at the 2000 level and 6 credit hours in History courses</li> <li>• 12 credit hours in other Honours field</li> <li>• 6 credit hours in ancillary options</li> </ul>		
Honours students must choose from a minimum of three different defined areas of historical study.			

**NOTES:**

<sup>1</sup> Students, particularly those intending to proceed to a graduate program, are encouraged to study a second language during the course of their Honours program.

<sup>2</sup> Ancillary options are courses taken from outside the Honours field of study.

<sup>3</sup> Honours courses: all 4000 level courses.

History courses are arranged into groups and areas of study as follows:

**Groups:**

numbered at the 1000 level: Introductory  
numbered at the 2000 level: General  
numbered at the 3000 level: Special  
numbered at the 4000 level: Honours

**Areas:**

A: The Americas  
B: Asian  
C: Canadian  
D: Ancient and Medieval  
E: European  
G: General  
M: Modern World  
R: African

For information regarding Cross-Disciplinary Programs, see [Section 8.8](#) and for Canadian Studies, see [Section 8.3](#).

**8.14.3 History -1000 Level**

**HIST 1200** An Introduction to the History of Western Civilization (G) Cr.Hrs.6

(Formerly 011.120) An introductory survey of the cultural history of the Western world from the ancient Greeks to the present. Students may not hold credit for HIST 1200 (011.120) and any of: HIST 1201 (011.120) or HIST 1350 (011.135) or HIST 1360 (011.136).

**HIST 1260** New Directions in History: Inquiries into the Cultural Basis of the Modern World (G) Cr.Hrs.3 (Formerly 011.126) The history of cultural change focusing on such topics as leisure and popular culture, sexuality and history, and the social consequences of creativity and genius. The specific content will vary from year to year.

**HIST 1270** New Directions in History: Inquiries into the Power Relations of the Modern World (G) Cr.Hrs.3

(Formerly 011.127) The history of the social and cultural impact of factors such as changes in technology and

communication, warfare, and revolution. The specific content will vary from year to year.

**HIST 1350** An Introduction to the History of Western Civilization to 1500 (G) Cr.Hrs.3

(Formerly 011.135) An introductory survey of the cultural history of the Western World from the earliest civilizations to 1500. Students may not hold credit for HIST 1350 (011.135) and any of: HIST 1200 (011.120) or HIST 1201 (011.120).

**HIST 1360** An Introduction to the History of Western Civilization from 1500 (G) Cr.Hrs.3

(Formerly 011.136) An introductory survey of the cultural history of the Western World from 1500 to the present. Students may not hold credit for both HIST 1360 (011.136) and any of: HIST 1200 (011.120) or HIST 1201 (011.120).

**HIST 1370** An Introduction to Modern World History: 1500-1800 (M) Cr.Hrs.3

(Formerly 011.137) A study of the forces which created the modern world, including the rise of capitalism and the encounter of Western and non-Western societies. Students may not hold credit for both HIST 1370 (011.137) and HIST



1500 (011.150).

**HIST 1380** An Introduction to Modern World History: 1800-Present (M) Cr.Hrs.3  
(Formerly 011.138) A study of the forces which created the modern world, including industrialization, imperialism, decolonization, and the emergence of revolution and counter-revolution. Students may not hold credit for both HIST 1380 (011.138) and HIST 1500 (011.150).

**HIST 1390** History of Colonial Canada: 1500-1885 (C) Cr.Hrs.3  
(Formerly 011.139) A study of the development of Canada from its colonial origins to the completion of national and transcontinental unification. Emphasis is on French Canada, Indian-European cultural contact, regional life and social organization, impact of colonialism, and the creation of a national state. Students may not hold credit for HIST 1390 (011.139) and any of: HIST 1440 (011.144) or HIST 1441 (011.144).

**HIST 1400** History of the Canadian Nation since 1867 (C) Cr.Hrs.3  
(Formerly 011.140) A study of the national development of Canada to the present. Emphasis is placed on French Canada, the regional life and social organization of the country, the impact of continentalism, the development of the economy, and the rise of a national sentiment. Students may not hold credit for HIST 1400 (011.140) and any of: HIST 1440 (011.144) or HIST 1441 (011.144).

**HIST 1420** Asian Civilizations to 1500 (B) Cr.Hrs.3  
(Formerly 011.142) A study of major themes in the history and culture of China and Japan, the Indian subcontinent and Southeast Asia from ancient times to around 1500. Also offered as Asian Studies ASIA 1420. May not be held with ASIA 1420 (150.142) or the former HIST 1410 (011.141).

**HIST 1430** Asian Civilizations from 1500 (B) Cr.Hrs.3  
(Formerly 011.143) A study of major themes in the history and culture of China and Japan, the Indian subcontinent and Southeast Asia in modern times. Also offered as Asian Studies ASIA 1430 (150.143). May not be held with ASIA 1430 (150.143) or the former ASIA 1410 (011.141).

**HIST 1440** History of Canada (C) Cr.Hrs.6  
(Formerly 011.144) A study of Canadian development from earliest days to the present. Emphasis is placed on Aboriginal societies, the history of French Canada, the regional life and social organization of the country, the impact of colonialism and continentalism, and the rise of nationalisms. Students may not hold credit for HIST 1440 (011.144) and any of: HIST 1441 (011.144) or HIST 1390 (011.139) or HIST 1400 (011.140).

**HIST 1500** An Introduction to Modern World History: 1500-Present (M) Cr.Hrs.6  
(Formerly 011.150) A study of the forces which created the modern world, including the rise of capitalism, colonial expansion from the 15th Century on, and the emergence of revolution and counter-revolution in the 20th Century. Students may not hold credit for both HIST 1500 (011.150) and any of: HIST 1370 (011.137) or HIST 1380 (011.138).

### 8.14.3 History -2000 Level

**HIST 2050** South Asia since 1947 (B) Cr.Hrs.3  
(Formerly 011.205) A comparative history of India, Pakistan, Bangladesh and Sri Lanka since their achievement of independence in the late 1940s.

**HIST 2080** The Byzantine Empire and the Slavic World (D) Cr.Hrs.3  
(Formerly 011.208) A study of the rise and fall of the "later Roman Empire" and of its relations with Russia, Bulgaria, Serbia and the west (i.e., in the crusades), 800-1261 A.D.

**HIST 2130** Emergence of Modern South Asia: 1757-1947 (B) Cr.Hrs.3  
(Formerly 011.213) A survey of major developments in the modern history of the Indian subcontinent with particular reference to colonialism and nationalism and to the 20th Century emergence of India, Pakistan, and Bangladesh.

**HIST 2140** Colonial Latin America (A) Cr.Hrs.3  
(Formerly 011.214) A survey of the major developments in Latin America from the Indigenous cultures and European Conquest to Independence in 1821.

**HIST 2150** Independent Latin America (A) Cr.Hrs.3  
(Formerly 011.215) A survey of the major developments in Latin America from Independence in 1821 to the present.

**HIST 2180** The History of Catholicism to 1540 (G) Cr.Hrs.3  
(Formerly 011.218) The history of Roman Catholicism from the first century to 1540. Emphasis will be placed on the external forces and internal developments that have shaped Catholicism.

**HIST 2210** History of Britain, 1485 to the Present (E) Cr.Hrs.6  
(Formerly 011.221) A general survey of British history from 1485 to the present. Emphasis is placed on constitutional, political, and diplomatic themes; social, economic, and cultural factors are also discussed. Students may not hold credit for both HIST 2210 (011.221) and HIST 2211 (011.221).

**HIST 2220** The Shaping of Modern Ireland, 1500-Present (E) Cr.Hrs.3  
The history of Ireland from 1500 to the end of the twentieth century focusing on changes in political, social, religious, economic and cultural relationships in shaping Modern Ireland.

**HIST 2230** History of the United States from 1607 (A) Cr.Hrs.6  
(Formerly 011.223) A survey of the development of the American people and their institutions from Colonial times to the present day. Students may not hold credit for HIST 2230 (011.223) and any of: HIST 2750 or HIST 2760 (011.276) or HIST 2761 (011.276).

**HIST 2240** History of Antisemitism and the Holocaust (E) Cr.Hrs.6  
(Formerly 011.224) A survey of the role of the Jewish minority in Christian Europe over the past two thousand



years. First term will focus on the evolution of anti-Jewish ideas and policies. Second term will be a study of the Nazi German Holocaust and, in particular, the role of antisemitism as a causal factor therein. Students may not hold credit for both HIST 2240 (011.224) and the former JUD 2940 (055.294).

**HIST 2250 Social History of the Jews: Antiquity to Present (G) Cr.Hrs.6**

A social, economic, and political history of the Jewish experience from the beginnings of the Jewish diaspora to the present, covering Jewish communities in medieval and modern Europe, the Middle East, and North America.

**HIST 2280 Aboriginal History of Canada (C) Cr.Hrs.6**  
(Formerly 011.228) A historical survey of Aboriginal peoples in Canada from early times to the present. The course will cover pre-contact peoples, responses to the European arrival, military alliances, the fur trade, the Métis, treaties, government policies and Aboriginal responses, and cultural resurgence and political organizing since 1945.

**HIST 2282 Inventing Canada (C) Cr.Hrs.3**

This course examines the "invention" and "reinvention" of Canada both before and after Confederation. It examines the process of invention from a range of different perspectives: political, cultural, economic, and social.

**HIST 2284 Democracy and Dissent: Contesting Canada (C) Cr.Hrs.3**

This course examines how Canadian democracy (in its broadest meaning) has been contested, debated, and challenged. The history of dissent and citizen engagement is key to the democratic evolution of Canada. The course will evaluate the impact of dissenting voices in Canadian society, such as those of workers, the poor, women, indigenous peoples, and racial and ethnic minorities.

**HIST 2286 Modern Canada (C) Cr.Hrs.3**

This course addresses the history of Canada since the First World War with attention to social, political, economic, diplomatic and cultural topics such as: interwar and postwar life, struggles for equality, international and internal conflict, immigration, new technologies, nationalism, aboriginal affairs, the arts and Canada's role in the world. Students may not hold credit for HIST 2286 and any of: HIST 2970 (011.297) or HIST 2971 (011.297) or HIST 3050 (011.305).

**HIST 2350 Europe 1789-1870 (E) Cr.Hrs.3**

The History of Europe during the French Revolution and the conservative reaction to it, focusing on political ideologies and national and international politics. Students may not hold credit for both HIST 2350 and HIST 2370 (011.237).

**HIST 2360 Europe 1870 to the Present (E) Cr.Hrs.3**

The history of Europe since 1870, focusing on industrialisation, imperialism, political ideologies, and national and international politics. Students may not hold credit for both HIST 2360 and HIST 2370 (011.237).

**HIST 2370 History of Europe since the French Revolution (E) Cr.Hrs.6**

(Formerly 011.237) The history of Europe since 1789, focusing on industrialization, political ideologies, and national and international politics. Students may not hold credit for

HIST 2370 (011.237) and any of: HIST 2350 or HIST 2360.

**HIST 2380 The Twentieth-Century World**

(G,M) Cr.Hrs.6

(Formerly 011.238) The problems of the modern world, including the global impact of Western civilization, the clash of ideologies, war and peace, and modernization. Students may not hold credit for both HIST 2380 (011.238) and HIST 2381 (011.238).

**HIST 2400 History of Human Rights and Social Justice in the Modern World (G,M) Cr.Hrs.3**

Introductory course examining the emergence of the modern human rights era and social justice movements globally. Possible topics of study: human rights as global norm; non-Western conceptions of rights; workplace rights; indigenous rights; women's and gender rights.

**HIST 2410 History of India (B) Cr.Hrs.6**

(Formerly 011.241) The aim of the course is to introduce students to Indian history. It provides a broad survey of major developments in Indian history from its origins in Indus valley to the present.

**HIST 2420 The Medieval World (D) Cr.Hrs.6**

(Formerly 011.242) A survey of the society and culture of the Middle Ages, from 500-1500.

**HIST 2490 History of Russia (E) Cr.Hrs.6**

(Formerly 011.249) A survey of Russian history from its origins to the present. Students may not hold credit for HIST 2490 (011.249) and any of: HIST 2660 (011.266) or HIST 2661 or HIST 2840 (011.284) or HIST 2841.

**HIST 2500 History of Africa (R) Cr.Hrs.6**

A broad survey of African history from pre-colonial times through colonialism to the post-colonial present.

**HIST 2520 A History of Germany since the Reformation (E) Cr.Hrs.6**

(Formerly 011.252) A survey of German history from the 16th Century to the present day.

**HIST 2570 Nationalism in Modern Times (M) Cr.Hrs.3**

(Formerly 011.257) A study of the ideology and practices of national movements in the 19th and 20th Centuries. Attention will be given in particular to the development of the idea of the nation, and nation-building in the twentieth-century world.

**HIST 2600 Introduction to Ukraine (E) Cr.Hrs.3**

A history of Ukraine and its people, beginning with medieval Kievan Rus' and ending in the 18th century with Ukraine's absorption into Russian and Austrian empires.

**HIST 2610 Making of Modern Ukraine (E) Cr.Hrs.3**

A history of cultural, religious, economic and political forces, in the period 1800 to the present, that stimulated Ukraine's struggle for national independence from foreign domination.

**HIST 2650 Modern China and Japan (B) Cr.Hrs.6**

(Formerly 011.266) An examination of the major developments in East Asian history from the mid-1800s to the present. Topics to be studied include Western



imperialism in East Asia, the Chinese revolutions, Japanese and Chinese approaches to modernization, democracy movements in Japan and China, and how Sino-Japanese relations shape the history of region.

**HIST 2654** History of the People's Republic of China, 1949-Present (B) Cr.Hrs.3

This course examines the history of the People's Republic of China from its founding in 1949 through the present day. The course considers continuity and change between the Maoist and post-1976 periods as well as changing meanings of socialism and their impact on state power and social orders.

**HIST 2660** History of the Soviet Union (E) Cr.Hrs.3 (Formerly 011.266) Attention will be given in particular to the Russian Revolution, the nature of the Soviet political system, the major social and economic experiments, and the Soviet role in international politics. Students may not hold credit for HIST 2660 (011.266) and any of: HIST 2661 or HIST 2490 (011.249) or the former HIST 3471 (011.347).

**HIST 2670** History of Capitalism (M) Cr.Hrs.3 (Formerly 011.267) A study of the emergence and evolution of the capitalist system stressing its effects on human culture from the 15th to the 20th Centuries. Students may not hold credit for both HIST 2670 (011.267) and HIST 2671.

**HIST 2680** A History of Socialism from the French Revolution to the Present (M) Cr.Hrs.3 (Formerly 011.268) The history of socialism, both revolutionary and nonrevolutionary from the French Revolution to the present. The course covers the history of theory and political action, and of both European and non-European socialism.

**HIST 2710** Women in History (G) Cr.Hrs.6 (Formerly 011.271) An introductory survey of the social, economic, cultural, and political history of women in Western society from prehistory to the present.

**HIST 2720** The World Since 1945 (G,M) Cr.Hrs.6 (Formerly 011.272) A survey of the political, social, economic, and cultural history of the world since World War II.

**HIST 2750** History of the United States from 1607 to 1877 (A) Cr.Hrs.3  
A survey of the development of the American people and their institutions from Colonial times to Reconstruction. Students may not hold credit for HIST 2750 and any of: HIST 2230 (011.223) or HIST 2041 (011.204).

**HIST 2760** History of the United States from 1877 (A) Cr.Hrs.3 (Formerly 011.276) A survey of the development of the American people from Reconstruction to the present. Students may not hold credit for HIST 2760 (011.276) and any of: HIST 2761 (011.276) or HIST 2230 (011.223).

**HIST 2820** An Introduction to Historical Method (G) Cr.Hrs.6 (Formerly 011.282) This course is intended mainly for prospective history and social science teachers but also will be useful for History Major and Honours students. It combines a survey of approaches to the writing of history,

past and present, and, through the presentation of a research paper, an introduction to the use and assessment of historical evidence. Students may not hold credit for both HIST 2820 (011.282) and the former HIST 2821 (011.282).

**HIST 2840** A History of Russia to 1917 (E) Cr.Hrs.3 (Formerly 011.284) A survey of the historical development of Russia from its beginnings to the end of the Imperial period. Students may not hold credit for HIST 2840 (011.284) and any of: HIST 2841 or HIST 2490 (011.249) or the former HIST 3471 (011.347).

**HIST 2900** Topics in Social History (G) Cr.Hrs.6 (Formerly 011.290) The content of this course will vary from year to year. A description of the course is available in advance at the History Department Office. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 2930** The History of the British Isles, 412-1485 (D) Cr.Hrs.6 (Formerly 011.293) A survey of the political, social, religious and cultural history of the British Isles (with special emphasis on England) from the end of the Roman occupation to the conclusion of the Wars of the Roses.

**HIST 2970** Modern Canada: 1921 to the Present (C) Cr.Hrs.6 (Formerly 011.297) An intensive examination of the building of modern Canada, as a nation state and as a social, cultural, economic and political entity. Students may not hold credit for HIST 2970 (011.297) and any of: HIST 2971 (011.297) or HIST 2286.

**HIST 2990** The History of Catholicism since 1540 (G) Cr.Hrs.3 (Formerly 011.299) The history of Roman Catholicism from about 1540 to the present. Emphasis will be placed on Catholic responses to the modern world and to movements of theological and institutional reform. Students may not hold credit for both HIST 2990 (011.299) and HIST 2991.

### 8.14.3 History -3000 Level

**HIST 3020** South America since 1945 (A) Cr.Hrs.3 (Formerly 011.302) Major developments since 1945 on the continent of South America, with special emphasis on major political movements, Marxism and populism, the impact of industrialization, and South America's international role. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3030** Issues in Ukrainian History (E) Cr.Hrs.3 (Formerly 011.303) The content of this course will vary and will be announced each year. It is intended to provide an analysis of important issues in Ukrainian history. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3040** Mexico, Central America, and Cuba since 1945 (A) Cr.Hrs.3 (Formerly 011.304) Major developments since 1945, with special emphasis on changes in the Mexican revolutionary system, the crisis in Central America, and the Cuban Revolution. Prerequisite: [a grade of "C" or better in six credit



hours of history] or written consent of department head.

**HIST 3050** Canada since 1945 (C) Cr.Hrs.6  
(Formerly 011.305) A problems approach to recent Canadian history involving lectures and seminars. Emphasis will be placed on political, social and economic issues of national interest during the last 40 years. Students may not hold credit for both HIST 3050 (011.305) and HIST 2286. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3052** Canada since the 1960s (C) Cr.Hrs.3  
Examines fundamental topics and themes in Canada's politics, economy and society from the 1960s to the present, including: Quebec nationalism after 1960; western regionalism and the reassertion of provincial rights since the 1970s; the women's movement and first nations' activism since the 1960s; constitutional reform, patriation and the Charter of Rights and Freedoms in the 1980s and 1990s; free trade and globalization since the 1980s. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3054** Canada and the United States  
(C) Cr.Hrs.3  
This course will undertake a detailed and comprehensive study of Canada's relationship with its neighbour from the eighteenth century to the present. Students may not hold credit for both HIST 3054 and HIST 3220 (011.322). Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3062** German and German-Jewish History,  
1618 to the Present (E) Cr.Hrs.6  
The history of Germany from 1618 to the present with a focus on the experience of German Jewry. Students may not hold credit for HIST 3062 and any of: HIST 3064 or HIST 3066 or the former HIST 3060 (011.306). Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3064** German and German-Jewish History,  
1618-1900 (E) Cr.Hrs.3  
The history of Germany from 1618 to 1900 with a focus on the experience of German Jewry. Students may not hold credit for HIST 3064 and any of: HIST 3062 or the former HIST 3060 (011.306). Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3066** German and German-Jewish History,  
1900 to the Present (E) Cr.Hrs.3  
The history of Germany from 1900 to the present with a focus on the experience of German Jewry. Students may not hold credit for both HIST 3066 and HIST 3062. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3070** History of the United States from 1877 to  
1939 (A) Cr.Hrs.6  
(Formerly 011.307) This course will trace the political, social, economic, and cultural history of the United States from the period of Reconstruction to the start of the Second World War. Prerequisite: [a grade of "C" or better in six credit hours

of history] or written consent of department head.

**HIST 3080** History of American Consumer Culture  
(A) Cr.Hrs.3  
(Formerly 011.308) This course will trace the development of American consumer society from the colonial era to the present. Topics addressed include the histories of: branding, mass distribution, department stores, advertising, mass-market magazines, consumer organizing, and consumer protest. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3090** Studies in Asian History (B) Cr.Hrs.3  
(Formerly 011.309) The content of this course will vary. It is designed to provide in-depth examination of specialized themes or areas in modern Asian history. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 3110** Topics in History 1 (G) Cr.Hrs.3  
(Formerly 011.311) An opportunity for the intensive study of selected topics or themes in history. The content varies, but may include work in social and cultural history or on specialized subjects. Consult the History Department and the Registration Guide for particulars. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 3120** Topics in History 2 (G) Cr.Hrs.3  
(Formerly 011.312) An opportunity for the intensive study of selected topics or themes in history. The content varies, but may include work in social and cultural history or on specialized subjects. Consult the History Department and the Registration Guide for particulars. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 3130** Issues in Social History (G) Cr.Hrs.3  
(Formerly 011.313) The content of this course will vary. It is designed to provide an analysis of important issues in Social history. Consult the History Department for particulars. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 3136** History of Medieval Italy, 568-1300  
(D) Cr.Hrs.3  
An examination of the political, social, economic and cultural history of the Italian peninsula from the arrival of the Lombards to the development of city republics. Students may not hold credit for both HIST 3136 and HIST 3140. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3138** History of Medieval Italy, 1300-1500  
(D) Cr.Hrs.3  
An examination of the political, social, economic and cultural history of the Italian peninsula during the later Middle Ages. Students may not hold credit for both HIST 3138 and HIST



3140. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3140** Medieval Italy (D) Cr.Hrs.6

A study of topics in the history of the Italian peninsula between the 6th and 15th centuries, with emphasis on urban life, gender, and religious culture. Students may not hold credit for HIST 3140 and any of: HIST 3136 or HIST 3138. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3210** The History of Popular Radicalism in the Twentieth Century (M) Cr.Hrs.6

(Formerly 011.321) Studies in the history of popular radicalism since the Bolshevik Revolution. Topics will include the development of communist and social democratic movements in the West, socialist revolutions in the underdeveloped world, the nature of communist workers' states and the development of radical theory. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3220** The History of Canadian-American Relations (A,C) Cr.Hrs.6

(Formerly 011.322) A detailed and comprehensive study of the diplomatic relations between Canada and the United States from 1783 to the present. Students may not hold credit for both HIST 3220 (011.322) and HIST 3054. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3250** Canada and the World, 1867 to the Present (C) Cr.Hrs.6

(Formerly 011.325) A study of selected aspects of Canada's external relations since Confederation. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3260** Commerce, Rights and Empire in European Thought, 500-2000 (M) Cr.Hrs.3

This course will scrutinize the intersection of commerce and governance in Europe from c.500 to the present, paying particular attention to the way that debates about commerce, war and peace have generated notions of human rights over the past three centuries. We will explore whether and how debates about the proper way to govern trade played important roles not only in the creation of the modern categories of the "state" and the "economy," but also in understandings of the person as a rational actor of politics with substantial rights. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3290** The United States since 1939 (A) Cr.Hrs.6

(Formerly 011.329) A survey of political, social, economic, and cultural history of the United States since the beginning of the Second World War. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3420** History of American Foreign Policy (A) Cr.Hrs.6

(Formerly 011.342) American diplomacy from the eve of the Revolution to the present, stressing Anglo-Canadian-

American relations in the nineteenth century and Far Eastern and Cold War policies in the 20th Century. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3430** Britain, 1714-1815 (E) Cr.Hrs.6

(Formerly 011.343) An examination of the political structure, constitutional developments, colonial problems, and social and religious changes, the impact of the industrial revolution, and the reaction to the French Revolution in Britain during this period. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3480** The Margins of the Middle Ages (D) Cr.Hrs.3

(Formerly 011.348) A study of groups and movements situated on the periphery of European society between 1100 and 1500. Prerequisite: [a grade of "C" or better in HIST 2420 (011.242)] or written consent of department head.

**HIST 3550** Popular Culture, Crime and Punishment in England, 1550-1850 (E) Cr.Hrs.3

(Formerly 011.355) A history of crime and the institutions for its control and punishment in England from the Tudor period to the turn of the nineteenth century. We will trace the connections between crime and larger processes such as war, the economy and urbanization. Topics will include the changing patterns of crime, the role of gender in the application of law, the reform of the criminal law and the emergence of imprisonment. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3570** History of Women in Canada (C) Cr.Hrs.6

(Formerly 011.357) This course explores the history of women in Canada from the pre-contact period to the present. Specific topics analysed in class and in readings will include women's roles in First Nations societies, white-Aboriginal contact, settlement, industrialization, family economy, immigration, work, sexuality, reproduction, feminism and politics. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3580** Topics in Recent World History 1 (M) Cr.Hrs.3

(Formerly 011.358) An in-depth treatment of selected topics in world history since 1945. The content of the course will vary from year to year, and a precise description is available in advance from the History department office. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 3590** Topics in Recent World History 2 (M) Cr.Hrs.3

(Formerly 011.359) An in-depth treatment of selected topics in world history since 1945. The content of the course will vary from year to year, and a precise description is available in advance from the History department office. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.



**HIST 3680** Europe, 1870-1945 (E) Cr.Hrs.6  
(Formerly 011.368) Europe at the zenith of its power. The course examines the dominant forces and personalities of the period between Bismarck and Hitler. It emphasizes nationalism and minorities questions; the origins and events of the two world wars; and the domestic concerns of the major European states. Students may not hold credit for HIST 3680 (011.368) and any of: HIST 3682 or HIST 3684. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3682** Europe 1870-1918 (E) Cr.Hrs.3  
Europe at the zenith of its power. The course examines the dominant forces and personalities of the period from Bismarck to the end of the First World War. It emphasizes the domestic and international concerns of the major European powers, the industrial revolution, and the partition of Africa, as well as the causes and events of the First World War. Students may not hold credit for both HIST 3682 and HIST 3680 (011.368). Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3684** Europe 1918-1945 (E) Cr.Hrs.3  
Europe in decline. The course examines the peace settlement of 1919, and the balance of power generally. It also considers fascism, the Russian Revolution, the rise of Nazism, the Spanish Civil War in addition to the origins and events of the Second World War. Students may not hold credit for both HIST 3684 and HIST 3680 (011.368). Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3690** History of Northern Canada (C) Cr.Hrs.6  
(Formerly 011.369) A regional history of northern Canada with particular emphasis on native people. Themes will include culture contact, economic exploitation of northern territories, and the political relationship of metropolis and hinterland in Canada. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3700** History of Working People and Labour Movements 1700 to the Present (G) Cr.Hrs.6  
(Formerly 011.370) A survey of working class history with emphasis upon the varieties of labour movements and trade unions. The course will refer to the social and political experience of working people in Great Britain, Europe and the United States and will devote one term to Canadian topics. Also offered as Labour Studies LABR 3700. May not be held with LABR 3700 (153.370). Prerequisite: [a grade of "C" or better in six credit hours of history or labour studies] or written consent of department head.

**HIST 3730** A History of Western Canada (C) Cr.Hrs.6  
(Formerly 011.373) A regional history emphasizing the development of a Western perspective upon the nation. Topics include the fur trade and Red River Settlement, transition to Canadian institutions, the wheat economy, immigration, labour and political movements, cultural changes. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3740** Topics in Latin American History  
(A) Cr.Hrs.3  
(Formerly 011.374) The contents of this course will be

announced each year. Consult the History Department. It is designed to provide in-depth studies of specialized subjects and themes in modern Latin American history. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 3760** Problems in American History 1  
(A) Cr.Hrs.3  
(Formerly 011.376) The subject matter of this course will be announced each year. Consult the History department. Students may not hold credit for both HIST 3760 (011.376) and HIST 3761 (011.376). Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 3770** Problems in American History 2  
(A) Cr.Hrs.3  
(Formerly 011.377) The subject matter of this course will be announced each year. Consult the History department. Students may not hold credit for both HIST 3770 (011.377) and HIST 3771 (011.377). Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 3780** Studies in Canadian History 1  
(C) Cr.Hrs.3  
(Formerly 011.378) The content of this course will vary. It is designed to provide in-depth studies of specialized topics and themes in Canadian history. A precise description of the course is available in advance at the History department office. Students may not hold credit for both HIST 3780 (011.378) and HIST 3781 (011.378). Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 3790** Studies in Canadian History 2  
(C) Cr.Hrs.3  
(Formerly 011.379) The content of this course will vary. It is designed to provide in-depth studies of specialized topics and themes in Canadian history. A precise description of the course is available in advance at the History department office. Students may not hold credit for both HIST 3790 (011.379) and HIST 3791 (011.379). Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 3800** History of Winnipeg from 1870-2000  
(C) Cr.Hrs.3  
A study of the social history of the city of Winnipeg from its origins through to the Aboriginal Justice Inquiry (1991). Students may not hold credit for both HIST 3800 and HIST 3790 (011.379) with the topic "History of Winnipeg." Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3810** The Family, Love and Marriage in Western Society, 1500-1800 (E) Cr.Hrs.6

(Formerly 011.381) An examination of the theory and practise of marriage in early modern Europe, with particular reference to the demographic, economic, religious and legal context for intimate relations. Students may not hold credit for both HIST 3810 (011.381) and HIST 3811 (011.381). Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3820** The Women's Movement, 1850 to the Present (G) Cr.Hrs.6

(Formerly 011.382) A comparative examination across western societies of women's reform organizations, of women's movement into public life, and of the changes in women's paid and unpaid work. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3880** Europe in Transition: 1348-1648 (E) Cr.Hrs.6

(Formerly 011.388) A study of the transition from the medieval to the modern world. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3910** The Ukrainians in Canada (C) Cr.Hrs.3

(Formerly 011.391) A history of the Ukrainian community in Canada. Topics to be discussed will include immigration, social and political organizations, churches, cultural assimilation, Ukrainian contributions to Canada, and relations with Ukraine. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3980** Nationalism on the Indian Sub-Continent in the Twentieth-Century (B) Cr.Hrs.3

(Formerly 011.398) A study of the emergence and consolidation of the nations of India, Pakistan and Bangladesh, 1909 to the present. Prerequisite: [a grade of "C" or better in six credit hours of history] or written consent of department head.

**HIST 3990** Seminar in Selected History Topics (G) Cr.Hrs.6

This course will provide a systematic introduction to advanced research seminars, paying particular attention to the development of: oral skills and public presentation of ideas and research; focused historiographical discussion and analysis; and advanced historical research and writing skills. This course provides the skills and preparation for Year IV of the History Honours program. Prerequisite: [a grade of "C" or better in six credit hours of History] and written consent of department head.

**8.14.3 History -4000 Level****HIST 4000** Topics in History (G) Cr.Hrs.3

The content of this course will vary. It is designed to provide students with specialized topics and themes in History. A description of the course is available in advance at the History Department Office. Prerequisite: written consent of department head. As the course will vary from year to year,

students may take this course more than once for credit.

**HIST 4010** Imperialism, Decolonization and Neo-Colonialism, 1700 to the Present (G,M) Cr.Hrs.6

(Formerly 011.401) Studies in the theories and practise of imperialism from an historical perspective. Prerequisite: written consent of department head.

**HIST 4040** The Later Middle Ages (D) Cr.Hrs.6

(Formerly 011.404) Selected topics in economics, social, cultural, art, and religious history of the later medieval world. Prerequisite: written consent of department head.

**HIST 4050** England in the Long Eighteenth Century (E) Cr.Hrs.6

(Formerly 011.405) Selected themes in the history of England's long eighteenth century, from 1660-1840. Specific topics will vary from year to year, but will generally include the transformation of political culture, the consequences of war, the question of national identities, the emergence of commercial society and the changes in social structure. Prerequisite: written consent of the department head.

**HIST 4060** Gender History in Canada (C) Cr.Hrs.6

(Formerly 011.406) Gender history explores the roles, images, and experiences of masculinity and femininity in the past. This course will familiarize students with the changing theoretical and historiographical terrain of gender history. It will draw on the international literature but focus on the history of gender in Canada, examining how historians analyse masculinity, femininity, the family, sexuality, politics, race/ethnicity, moral regulation, class, nation, and colonialism. Prerequisite: written consent of department head.

**HIST 4070** Issues in Modern Asian History 1: Selected Topics (M,B) Cr.Hrs.3

(Formerly 011.407) The content of this course will vary. Emphasis will be on analysis of important issues and recent developments in the history and historiography of modern Asia. Consult the History Department for particulars. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 4080** Issues in Modern Asian History 2: Selected Topics (M,B) Cr.Hrs.3

(Formerly 011.408) The content of this course will vary. Emphasis will be on analysis of important issues and recent developments in the history and historiography of modern Asia. Consult the History Department for particulars. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 4100** Studies in American History since 1877 (A) Cr.Hrs.6

(Formerly 011.410) An examination of selected topics in American history from Reconstruction to the present. Particular topics will be announced each year. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 4110** Selected Topics in British History

(E) Cr.Hrs.6

(Formerly 011.411) A seminar course whose content will vary. A description of the course is available in advance at the History department office. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 4120** History of Aboriginal Rights (C) Cr.Hrs.6

(Formerly 011.412) A study of Aboriginal rights from early contact to the present with a particular emphasis on treaties, the courts, and Aboriginal efforts to enforce specific forms of rights. Prerequisite: written consent of department head.

**HIST 4150** The Social History of the Latin American State (1492-2005) (A) Cr.Hrs.6

Readings on the history of Latin America since colonial times, focused on the dynamic relationship between different social groups and the state. Based on an interdisciplinary theoretical framework, this historical overview will cover different geographical areas, issues, and social factors. Prerequisite: written consent of department head.

**HIST 4200** Modern South Asia: Colonialism, Nationalism and Modernization (B) Cr.Hrs.6

(Formerly 011.420) A study of selected themes in the history of the Indian subcontinent in the 19th and 20th Centuries. Prerequisite: written consent of department head.

**HIST 4280** Topics in the Cultural History of Canada (C) Cr.Hrs.6

(Formerly 011.428) Studies in Canadian cultural, communications, and intellectual history. Topics will vary from year to year but a description is available in advance at the History department office. Prerequisite: written consent of department head.

**HIST 4300** Problems in Modern Russian and Soviet History (E) Cr.Hrs.6

(Formerly 011.430) A study of selective historical problems from 1861 to the present. The focus will shift from year to year. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 4310** Topics in Social History (G) Cr.Hrs.6

(Formerly 011.431) The content of this course will vary. It is designed to provide students with specialized topics and themes in Social history. A description of the course is available in advance at the History department office. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 4320** Studies in World History since 1945

(G,M) Cr.Hrs.6

(Formerly 011.432) A comparative approach to recent world history, utilizing area and thematic studies. Prerequisite: written consent of department head.

**HIST 4340** Introduction to Archival Science

(G) Cr.Hrs.6

(Formerly 011.434) A thorough introduction to archival theory and practise with special emphasis on the history and

development of archives and their place in modern society, terminology, collection development, appraisal arrangement, access, conservation, research aids and related archival principles. Prerequisite: written consent of department head.

**HIST 4400** Historical Method and Historiography

(G) Cr.Hrs.6

(Formerly 011.440) A study of historical methods and historiography. Prerequisite: written consent of department head.

**HIST 4410** The Renaissance (E) Cr.Hrs.6

(Formerly 011.441) Interpretations of the transitional period, 1300 to 1500, in Europe, with emphasis upon cultural and intellectual aspects of the Renaissance in Italy. Prerequisite: written consent of department head.

**HIST 4500** Jewish and European History and Historiography (E) Cr.Hrs.6

This seminar examines issues relating to Jewish history and historiography in the context of European history and historiography. Prerequisite: written consent of department head.

**HIST 4580** The Great Historians (G) Cr.Hrs.6

(Formerly 011.458) The readings of a select number of modern and classical historians. Preparation of a research paper on a particular historiographic problem. Prerequisite: written consent of department head.

**HIST 4660** History of Health and Disease

(G) Cr.Hrs.6

Introduction to some of the principal issues and approaches in the history of health and disease. It is not meant to be a strictly chronological survey. Topics and themes may include the development of nursing and medical professions; transformation of the hospital; mental health; alternative therapies; colonization, infectious disease and aboriginal health; and health and the state. Prerequisite: written consent of department head.

**HIST 4680** Social History of Health and Disease in Modern Canada (C) Cr.Hrs.6

This course explores the history of health and health care in Canada, with a focus on the late 19th and 20th centuries. Topics will include colonization, infectious disease, and Aboriginal health; the evolution of medical and nursing professions; the emergence of the modern hospital; mental health, psychiatry and the asylum; cancer; alternative therapies; childbirth; health and old age; and health and the state. Analytical categories of gender, race, ethnicity, class, and sexuality will run throughout the material. Prerequisite: written consent of department head.

**HIST 4700** Canada, 1896 to the Present (C) Cr.Hrs.6

(Formerly 011.470) A detailed study of the major problems which have confronted Canada in the 20th century. Prerequisite: written consent of department head.

**HIST 4720** History of Manitoba (C) Cr.Hrs.6

(Formerly 011.472) An intensive study of selected topics in the history of Manitoba from the 1890s to the present. Prerequisite: written consent of department head.



**HIST 4870** Contemporary Latin America (A) Cr.Hrs.6 (Formerly 011.487) A study of selected historical developments in Latin America since the Cuban Revolution, with emphasis on most recent themes. Prerequisite: written consent of department head.

**HIST 4890** Canadian Social History (C) Cr.Hrs.6 (Formerly 011.489) A study of the evolution of Canadian society with intensive analysis of topics such as the pioneer community, immigration, ethnic history, urban development. Prerequisite: written consent of department head.

**HIST 4960** Special Studies in European History (E) Cr.Hrs.6 (Formerly 011.496) A seminar course whose content will vary from year to year. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 4990** Selected Topics Cr.Hrs.6 (Formerly 011.499) A program of independent reading and/or research on selected topics, undertaken and arranged by a student in consultation with prospective instructor, upon the written approval of the department head. As the course content will vary from year to year, students may take this course more than once for credit.

## 8.15 Department of Icelandic

**Head:** (Acting Head) Birna Bjarnadóttir

**Campus Address/General Office:** 357 University College

**Telephone:** 204 474 8487

**Email Address:** [um\\_icelandic@umanitoba.ca](mailto:um_icelandic@umanitoba.ca)

**Website:** [umanitoba.ca/icelandic](http://umanitoba.ca/icelandic)

### 8.15.1 Program Information.

Icelandic is a study of Icelandic language, literature and the art of film and offers a better understanding of the

### 8.15.2 Icelandic.

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>MAJOR (OPTION 1) TOTAL: 30 CREDIT HOURS</b>			
ICEL 1200 <sup>1</sup>	ICEL 2200	18 credit hours in Icelandic courses numbered at the 2000, 3000, or 4000 level	
<b>MAJOR (OPTION 2) TOTAL: 30 CREDIT HOURS</b>			
ICEL 2200	24 credit hours in Icelandic courses numbered at the 2000, 3000, or 4000 level		
<b>MINOR (CONCENTRATION) (OPTION 1) TOTAL: 18 CREDIT HOURS</b>			
ICEL 1200 <sup>1</sup>	ICEL 2200	6 credit hours in Icelandic	
<b>MINOR (CONCENTRATION) (OPTION 2) TOTAL: 18 CREDIT HOURS</b>			
ICEL 1400 and ICEL 1410, or ICEL 1200	12 credit hours in Icelandic		

indispensable and creative task of exploring and interpreting culture. The study of Icelandic prepares students for opportunities in interpretation, translation, teaching, research, writing and publishing.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in either ICEL 1200 or ICEL 2200. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in ICEL 1400 and ICEL 1410, or ICEL 1200 or ICEL 2200.

### Honours Program

The Honours program is not currently offered.

For information on reciprocal recognition of credit for Scandinavian/ Icelandic courses given by the University of Alberta and the University of Manitoba, see the department.



HONOURS SINGLE OR DOUBLE <sup>2,3</sup>			
ICEL 2200	ICEL 2220, ICEL 2420, ICEL 2430	ICEL 2310, ICEL 3400	<ul style="list-style-type: none"> <li>• ICEL 4420, ICEL 4440, ICEL 4460</li> <li>• 3 credit hours in Icelandic courses numbered at the 3000 level</li> </ul>
<p><b>NOTES:</b></p> <p><sup>1</sup> "Prior to standing" in ICEL 1200 will be determined by means of a written test administered by the department at time of registration.</p> <p><sup>2</sup> Students who qualify for Single or Double Honours must select the balance of their work in years 2, 3, and 4 from: Classics, English, French, German, History, Philosophy, or Russian in consultation with the department head.</p> <p><sup>3</sup> Honours courses: ICEL 2310, ICEL 2420, ICEL 2430, ICEL 3400 and all 4000 level courses.</p>			

### 8.15.3 Icelandic -1000 Level

#### ICEL 1200 Introduction to Icelandic Cr.Hrs.6

The course is intended for students with little or no previous knowledge of Icelandic. Emphasis will be placed on reading comprehension and conversation skills, and students will also learn the basic grammatical structure of Icelandic and how to write short compositions. Pronunciation is developed in weekly language laboratory exercises. Students may not hold credit for both ICEL 1200 and the former ICEL 1240 (012.124).

#### ICEL 1210 Conversational Icelandic Cr.Hrs.3

This course is offered as part of the Summer Session course offerings. Intensive study of conversational Icelandic during a field trip to Iceland. Students will be trained in groups in a classroom setting before they try their language skills in authentic situations. The course is designed for beginners as well as intermediate students. Regular attendance is obligatory. Taught in English. Open to all students.

#### ICEL 1300 Introduction to Swedish Cr.Hrs.3

The course is intended for beginners. Emphasis will be placed on conversation skills and reading comprehension, and students will also learn the basic grammatical structures of the language and how to write short compositions. Pronunciation is developed in weekly language laboratory exercises. Open to all students.

#### ICEL 1400 Introduction to Contemporary Culture in Iceland Cr.Hrs.3

The aim of this course is to study and explore a selection of literature, music, and visual art, and cultural critique. Students will also get an opportunity to study and explore both global and local Icelandic cultural characteristics and the fusion of cultural influences in contemporary Iceland. Open to all students. Taught in English. Students may not hold credit for both ICEL 1400 and the former ICEL 1220 (012.122).

#### ICEL 1410 Introduction to Culture in Medieval Iceland Cr.Hrs.3

The aim of this course is to study a selection of sagas, history fragments and mythological sources. Students will also get an opportunity to explore the way in which world-renowned modern poets and writers have been drawn to,

and seriously seduced by, the culture of medieval Iceland. Open to all students. Taught in English. Students may not hold credit for both ICEL 1410 and the former ICEL 1220 (012.122).

### 8.15.3 Icelandic -2000 Level

#### ICEL 2200 Intermediate Icelandic 1 Cr.Hrs.6

Emphasis on expanding the vocabulary. Students are trained to read texts with more complex grammatical structures by studying fictional as well as non-fictional texts. Conducted in Icelandic. Students may not hold credit for both ICEL 2200 and the former ICEL 2240 (012.224). Prerequisite: [a grade of "C" or better in ICEL 1200 or the former ICEL 1240 (012.124)] or written consent of instructor.

#### ICEL 2220 Modern Icelandic Literature in Translation Cr.Hrs.3

(Formerly 012.222) A study of modern Icelandic literature through an analysis of a selection of works by Icelandic writers in English translation from around 1900 until the present.

#### ICEL 2230 Contemporary Icelandic-Canadian Literature Cr.Hrs.3

(Formerly 012.223) An examination of contemporary Icelandic-Canadian literature in English, its individual characteristics and place within the broader field of Canadian literature.

#### ICEL 2310 An Introduction to Old Icelandic Language and Literature Cr.Hrs.6

(Formerly 012.231) Text: Sigrid Valfells and James E. Cathey. Old Icelandic: An Introductory Course (Oxford, 1981). Prerequisite: written consent of department head.

#### ICEL 2400 Icelandic Folktales in a European Context Cr.Hrs.3

Reading of Icelandic legends and fairy tales and how they compare with stories from Northern and Central Europe. For the analysis, students will be introduced to central concepts and approaches to the study of folktales. Open to all students. Taught in English. Students may not hold credit for both ICEL 2400 and the former ICEL 2250 (012.225).

#### ICEL 2410 Special Topics Cr.Hrs.3

Topics dealing with Icelandic literature, culture or language.



Course content will vary from year to year depending on interest and needs of students and staff. As the course content will vary from year to year, students may take this course more than once for credit.

#### **ICEL 2420 Poetics of Immigration in Icelandic-Canadian Literature Cr.Hrs.3**

A study of Icelandic-Canadian literature, focusing on the poetics of immigration in the writings of Icelandic settlers and the first generation of Icelandic-Canadians. As a special assignment, students will study the voice of the poet, philosopher, and social prophet Stephan G. Stephansson, and the universal references of his poetics. Taught in English. Open to all students. Students may not hold credit for both ICEL 2420 and the former ICEL 2300 (012.230).

#### **ICEL 2430 Translation of Cultures in Icelandic-Canadian Literature Cr.Hrs.3**

A study of Icelandic-Canadian literature, focusing on the translation of cultures in the writings of modern and contemporary Icelandic-Canadian poets and writers. Students will read a selection of prose and poetry. They will also study ideas on the indispensable role of the translation of cultures in the context of world literature. Open to all students. Taught in English. Students may not hold credit for both ICEL 2430 and the former ICEL 2300 (012.230).

### **8.15.3 Icelandic -3000 Level**

#### **ICEL 3200 Intermediate Icelandic 2 Cr.Hrs.6**

Reading of selected fictional and non-fictional texts. Translation exercises and composition followed by relevant review of grammar. A special focus is placed on syntax, word formation, and the use of idiomatic phrases. Conducted in Icelandic. Students may not hold credit for both ICEL 3200 and the former ICEL 3230 (012.323). Prerequisite: [a grade of "C" or better in ICEL 2200 or the former ICEL 2240 (012.224)] or written consent of instructor. Prerequisite or corequisite: [LING 1200 (126.120) or LING 1440 (126.144) or the former ENGL 2470 (004.247)] or written consent of instructor.

#### **ICEL 3210 Romanticism in Icelandic Literature Cr.Hrs.3**

The aim of this course is to study the concept of Romanticism in Icelandic literature and the key players in the Romantic movement in nineteenth century Iceland. A selection of poems, prose texts, and fragments will be read carefully, in particular the writings of Jónas Halgrímsson. Taught in English. Prerequisite: [a grade of "C" or better in a minimum of 30 credit hours of university level coursework] or

written consent of department head.

#### **ICEL 3320 Old Norse Mythology Cr.Hrs.3**

(Formerly 012.332) The myths and cults of the pre-Christian gods in the Nordic countries studied on the basis of the original sources (in English translation) and related to pre-Christian Nordic society. Open to all students; taught in English.

#### **ICEL 3330 Icelandic Sagas in Translation Cr.Hrs.3**

(Formerly 012.333) A study of the Icelandic sagas based on the original sources in English translation. Open to all students; taught in English. ICEL 3320 (012.332) is recommended but not required.

#### **ICEL 3400 Old Icelandic Literature Cr.Hrs.6**

(Formerly 012.340) A study of selected Icelandic sagas and Eddic poems. Prerequisite: written consent of department head.

### **8.15.3 Icelandic -4000 Level**

#### **ICEL 4420 History of the Icelandic Language Cr.Hrs.3**

(Formerly 012.442) A study of the development of the Icelandic language from the twelfth century to the present day. Prerequisite: written consent of department head.

#### **ICEL 4440 The Icelanders in Canada Cr.Hrs.3**

(Formerly 012.444) A history of the emigration of Icelanders to North America and the Icelandic communities in Canada, their social and political organizations, churches, and cultural assimilation. Prerequisite: written consent of department head.

#### **ICEL 4460 Special Topics Cr.Hrs.3**

(Formerly 012.446) A seminar course whose content will vary from year to year. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

## **8.16 Interdisciplinary Courses**

The Faculty of Arts offers a number of interdisciplinary courses designed by a course committee consisting of members of a number of departments. Interdisciplinary courses are free options, and a student may register for more than one.

Cross-disciplinary programs are available in:

Asian Studies	<a href="#">See Section 8.2</a>
Canadian Studies	<a href="#">See Section 8.3</a>
Catholic Studies	<a href="#">See Section 8.4</a>
Central and East European Studies	<a href="#">See Section 8.5</a>
The Changing Workplace	<a href="#">See Section 8.6</a>
Global Political Economy	<a href="#">See Section 8.13</a>
History of Art	<a href="#">See Section 9.1</a>
Labour Studies	<a href="#">See Section 8.18</a>



Latin American Studies [See Section 8.19](#)  
 Medieval and Renaissance Studies [See Section 8.21](#)  
 Ukrainian Canadian Heritage Studies [See Section 8.28](#)  
 Women's and Gender Studies [See Section 8.29](#)

**8.16.1 Interdisciplinary-Others**

**ARTS 1110** Introduction to University Cr.Hrs.3  
 (Formerly 099.111) A seminar course designed to help students make the transition from high school to university by imparting the knowledge, skills, and attitudes requisite for success in university study. Each section limited to 30 students. Open only to students who have completed less than twelve credit hours. Students may not hold credit for

both ARTS 1110 (099.111) and ARTS 1111 (099.111).

**ARTS 1160** Leadership: An Interdisciplinary Approach Cr.Hrs.3

This course provides an introduction to the key issues and concerns of leadership and leadership studies, focusing on the central question of "what is leadership." Students will examine the philosophical and historical foundations of leadership theory and practice, along with the more contemporary (and often more theoretical) reflections on both leadership practices and the varied disciplines that study them. This course will satisfy the Faculty of Arts Social Science requirement. Students may not hold credit for both ARTS 1160 and LEAD 2010.

**8.17 Judaic Studies**

**Program Coordinators:** Benjamin Baader, Justin Jaron Lewis  
**General Office:** 328 Fletcher Argue  
**Telephone:** 204 474 6691  
**E-mail:** [Judaic\\_Studies@umanitoba.ca](mailto:Judaic_Studies@umanitoba.ca)  
**Website:** [umanitoba.ca/judaic\\_studies](http://umanitoba.ca/judaic_studies)

**8.17.1 Program Information,**

The Judaic Studies Program promotes the study of Jewish civilization, of Jewish religious expressions and traditions,

**8.17.2 Judaic Studies,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR JUDAIC STUDIES [NOT CURRENTLY OFFERED] TOTAL: 30 CREDIT HOURS</b>			
• 6 credit hours in Language and Literature (Hebrew <sup>1</sup> , Yiddish, or Arabic <sup>2</sup> )			
• 6 credit hours in Judaic Civilization			
• 18 credit hours in Judaic Studies			
<b>ADVANCED MAJOR JUDAIC STUDIES [NOT CURRENTLY OFFERED] TOTAL: 48 CREDIT HOURS</b>			
• 12 credit hours in Language and Literature (Hebrew <sup>1</sup> , Yiddish, or Arabic <sup>2</sup> )			
• 12 credit hours in Judaic Civilization			
• 24 credit hours in Judaic Studies			
<b>MINOR (CONCENTRATION) JUDAIC STUDIES TOTAL: 18 CREDIT HOURS</b>			
18 credit hours in Judaic			

and of Jewish cultural, social, and political formations and movements in all their variety. It supports teaching and research on Jewish life and Judaism from the Biblical period to the twenty-first century, in all parts of the world where Jews have lived. Judaic Studies approaches these subjects from all disciplinary angles and scholarly perspectives, and equally welcomes Jewish and non-Jewish scholars and students.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

**Major Program**

Effective the 1989-1990 Regular Session, the General Major and Advanced Major in Judaic Studies will not be offered until further notice.

**Minor (Concentration) Program**

A) Judaic Studies

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in the first six credit hours of Judaic Studies and/or List A courses.

B) Yiddish

Effective with the 1989-1990 Regular Session, the Minor in Yiddish will not be offered until further notice.



Studies and/or List A			
<b>MINOR (CONCENTRATION) YIDDISH [NOT CURRENTLY OFFERED] TOTAL: 18 CREDIT HOURS</b>			
YDSH 1220	YDSH 2320	6 credit hours in Hebrew Language and Literature or Judaic Civilization	
<b>NOTES:</b>			
<sup>1</sup> A language-placement interview is required before registration. Normally, elementary Hebrew day school graduates begin with HEB 1260 while secondary Hebrew day school graduates begin with language courses numbered at the 2000 or 3000 level. <sup>2</sup> A language-placement interview is required before registration.			

**List A Courses Acceptable for Judaic Studies Credit**

With written consent of the program coordinator courses not on this list may be taken for credit if they include sufficient Judaic Studies content.

Course No.		Credit Hours
<b>Faculty of Arts</b>		
Classics		
CLAS 3260	Hellenistic Civilization: History and Archaeology	3
GRK 2810	Prose Writings of the Hellenistic and Greco-Roman Periods	3
German and Slavic Studies		
GRMN 3260	Representations of the Holocaust	3
GRMN 3262	Representations of the Holocaust in English Translation	3
UKRN 2820	Holodomor and Holocaust in Ukrainian Literature and Culture	3
History		
HIST 2240	History of Antisemitism and the Holocaust (E)	6
HIST 2250	Social History of the Jews: Antiquity to Present (G)	6
HIST 3062	German and German-Jewish History, 1618 to the Present (E)	6
HIST 3064	German and German-Jewish History, 1618-1900 (E)	3
HIST 3066	German and German-Jewish History, 1900 to the Present (E)	3
HIST 4500	Jewish and European History and Historiography (E)	6
Political Studies		
POLS 3340	Middle East Politics	3
Religion		
RLGN 1120	Biblical Hebrew (A)	6
RLGN 1390	Readings in Biblical Hebrew 1 (A)	3
RLGN 1400	Readings in Biblical Hebrew 2 (A)	3
RLGN 2140	Introduction to Judaism (A)	3
RLGN 2150	The Talmud (A)	3
RLGN 2160	Introduction to Hebrew Scriptures (A)	3
RLGN 2231	Étude de l'Ancien Testament (A)	6
RLGN 2760	Rabbinic Judaism (A)	3
RLGN 2770	Contemporary Judaism (A)	3
RLGN 3280	Hasidism (A)	3
RLGN 3790	Prophets of Ancient Israel (A)	6
RLGN 3800	Selected Old Testament Literature and Themes (A)	6
RLGN 3824	Kabbalah (A)	3
RLGN 3830	The Bible as Story (A)	3

reading, conversation and listening comprehension for

**8.17.3 Judaic Studies –Arabic**

**ARA 1000** Elementary Arabic Cr.Hrs 6  
(Lab required) An introductory course in written and oral Arabic, for students with little or no previous knowledge of the language. Language laboratory exercises will be included in addition to class time. Students may not hold credit for ARA 1000 and any of: the former ARA 2260 or the former SEM 2260 (055.226). Not open to students who have previously obtained credit in ARA 2000. Prerequisite: written consent of instructor.

everyday Arabic, and cover many of the important grammatical features of the language. By the end of this course, the learner should be able to communicate in many situations with fluency or near fluency. Prerequisite: [a grade of "C" or better in ARA 1000 or the former ARA 2260 or the former SEM 2260 (055.226)] or written consent of instructor.

**ARA 2000** Intermediate Arabic Cr.Hrs.6  
(Lab required) This intermediate class will improve writing,

**8.17.3 Judaic Studies -Hebrew**

**HEB 1120** Biblical Hebrew (A) Cr.Hrs.6  
(Formerly SEM 1120 or 055.112) An introductory course with



emphasis on basic grammar and syntax. Students will learn to read simple biblical narratives. Students may not hold credit for HEB 1120 and any of: RLGN 1120 (020.112) or the former SEM 1120 (055.112).

**HEB 1250 Hebrew 1 Cr.Hrs.6**

(Formerly SEM 1250 or 055.125) For students with a minimal experience with the language yet with a basic ability to read it. Following current methods in the teaching of a second/ foreign language, the listening-comprehension, speaking, reading and writing skills are developed. Language lab and organized conversation are part of the course. Intended for students with a strictly elementary standing. Students may not hold credit for both HEB 1250 and the former SEM 1250 (055.125). Prerequisite: written consent of program coordinator.

**HEB 1260 Hebrew 2 Cr.Hrs.6**

(Formerly SEM 1260 or 055.126) For students who have taken HEB 1250 or the former SEM 1250 (055.125) or the equivalent. Spoken and written Hebrew - vocabulary and grammar, organized conversation and reading of selected texts. In addition to regular sessions, either one hour of lab or directed conversation per week is required. Students may not hold credit for both HEB 1260 and the former SEM 1260 (055.126). Prerequisite: written consent of program coordinator.

**HEB 2210 Modern Hebrew Literature Cr.Hrs.6**

(Formerly SEM 2210 or 055.221) Uri Zvi Greenberg, Lamdan, Sholonsky, Agnon, Burla, Hazzaz, Yizhar, Shamir Amihay, S. Shalom - poetry and prose. The modern Isreal short story. Students may not hold credit for both HEB 2210 and the former SEM 2210 (055.221). Prerequisite: written consent of program coordinator.

**HEB 2250 Rabbinic Hebrew Cr.Hrs.6**

(Formerly SEM 2250 or 055.225) Study of the style, vocabulary, grammar, and syntax of halakhic and aggadic rabbinic texts. A representative selection of Talmud, Midrashim Codes, and Responsa will be drawn from both the medieval and modern periods. Students may not hold credit for both HEB 2250 and the former SEM 2250 (055.225). Prerequisite: written consent of program coordinator.

**HEB 2280 Introduction to Hebrew Literature Cr.Hrs.6**

(Formerly SEM 2280 or 055.228) A study of the history and forms of Hebrew Literature from biblical to modern times. Students may not hold credit for both HEB 2280 and the former SEM 2280 (055.228). Prerequisite: [a grade of "C" or better in HEB 1260 or the former SEM 1260 (055.126)] or written consent of program coordinator.

**HEB 2350 Hebrew 3 Cr.Hrs.6**

(Formerly SEM 2350 or 055.235) For students who have taken HEB 1260 or the former SEM 1260 (055.126) or the equivalent. Further oral practise, vocabulary expansion and grammar review, and development of reading and writing skills. Students may not hold credit for both HEB 2350 and the former SEM 2350 (055.235). Prerequisite: written consent of program coordinator.

**HEB 3360 Hebrew Communication Arts Cr.Hrs.6**

(Formerly SEM 3360 or 055.336) A study of all aspects of

Hebrew communication. For advanced students with reasonable fluency in the language. The writing skill on general subjects will be developed as well as comprehension and vocabulary expansion in the reading of more technical texts. Students may not hold credit for both HEB 3360 and the former SEM 3360 (055.336). Prerequisite: written consent of program coordinator.

**HEB 3370 Hebrew Language and Literature Cr.Hrs.6**

(Formerly SEM 3370 or 055.337) A study of the structure and usage of modern Hebrew, examination of selections of Major modern writers and development of speaking and writing skills. Review of the history of Hebrew and the application of linguistics to the understanding of the language. Students may not hold credit for both HEB 3370 and the former SEM 3370 (055.337). Prerequisite: written consent of program coordinator.

**HEB 3380 The Creation of Modern Hebrew Cr.Hrs.6**

(Formerly SEM 3380 or 055.338) An advanced study of the revival of Hebrew as a spoken language. Other attempts at language planning and revival will be observed. Lectures and discussions will be in Hebrew. Students may not hold credit for both HEB 3380 and the former SEM 3380 (055.338). Prerequisite: written consent of program coordinator.

**8.17.3 Judaic Studies -Judaic Civilization**

**JUD 2290 History of Jewish Thought Cr.Hrs.6**

(Formerly 055.229) A survey of intellectual and philosophical patterns as exhibited throughout Jewish history. Particular attention will be paid to the cultural, social, and economic influences which gave rise to these patterns.

**JUD 2300 The Makers of Modern Judaism Cr.Hrs.6**

(Formerly 055.230) The course will begin with the emancipation of Jews under Napoleon and the subsequent progress of Enlightenment. Particular attention will be given to the rise of contemporary Jewish ideologies and movements.

**JUD 2340 Contemporary Israel Cr.Hrs.3**

(Formerly 055.234) A study of the history and development of modern Israel. Topics discussed include the economic, social, cultural and religious structures of the contemporary Jewish state. Attention will also be focused on the status of Israeli minorities such as Moslems and Christians.

**JUD 2370 Jewish-Gentile Relations Cr.Hrs.3**

(Formerly 055.237) A socio-historical study of the cultural, religious, and intellectual interaction between Jewish and non-Jewish cultures, e.g., the relationship of Judaism with other cultures of the ancient Near East and Hellenism, with medieval and modern Christendom and Islam, and with modern/contemporary secularism.

**JUD 2650 Field Studies in Biblical Lands Cr.Hrs.6**

(Formerly 055.265) Offered as part of the Summer Session, the course consists of three weeks on-campus study to be followed by three weeks travel in the Holy Land visiting Major sites and points of interest.

**JUD 3010 Topics in Jewish Studies Cr.Hrs.3**

An opportunity for the study of selected topics or themes in



Jewish Studies. Consult the Judaic Studies program office or website for details. As the course content will vary from year to year, students may take this course more than once for credit.

### 8.17.3 Judaic Studies -Yiddish

#### YDSH 1220 Yiddish Cr.Hrs.6

(Formerly 055.122) This course is intended for those who have little or no experience with the Yiddish language, and may not normally be taken by students who have attended a Yiddish day school. Emphasis on conversational Yiddish and reading comprehension. Prerequisite: written consent of program coordinator.

#### YDSH 2320 Yiddish Literature and Language Cr.Hrs.6

(Formerly 055.232) Survey of Yiddish literature; review of Yiddish language skills. This course is intended for graduates of Yiddish day schools, those who have completed YDSH 1220 (055.122) or equivalent, and students with other previous training in Yiddish. Prerequisite: [a grade of "C" or better in YDSH 1220 (055.122)] or written consent of program coordinator.

## 8.18 Labour Studies Program

**Program Coordinator:** Julie Guard

**Program Office:** 114 Isbister

**Telephone:** 204 474 8356

**E-mail:** [labour\\_studies@umanitoba.ca](mailto:labour_studies@umanitoba.ca)

**Website:** [umanitoba.ca/labour\\_studies](http://umanitoba.ca/labour_studies)

### 8.18.1 Program Information,

This interdisciplinary program examines the social, economic and political realities of work. Social justice and fundamental rights, the way work is organized, the dynamics of power in the workplace and the political economy of labour are examined critically. We explore the past, present and future of the labour movement and the wide-ranging effects of globalization on our daily lives. Using theoretical and practical approaches, we examine the forces that shape working people's lives and our responses to them.

### 8.18.2 Labour Studies

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
LABR 1260 and LABR 1290	<ul style="list-style-type: none"> <li>• 6 credit hours of LABR courses at the 2000 level</li> <li>• 6 credit hours of LABR courses at the 3000 level</li> <li>• 12 credit hours from LABR courses and/or the list of electives below</li> </ul>		
<b>ADVANCED MAJOR TOTAL: 54 CREDIT HOURS</b>			
LABR 1260 and LABR 1290	<ul style="list-style-type: none"> <li>• 6 credit hours of LABR courses at the 2000 level</li> <li>• 21 credit hours of LABR courses at the 3000 level</li> </ul>		

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in both LABR 1260 (the former LABR 1270) and LABR 1290 (the former 153.128). For students who have taken additional courses toward the Major, a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

For entry to the Minor, the prerequisite is a grade of "C" or better in both LABR 1260 (the former LABR 1270) and LABR 1290 (the former 153.128).

### All Programs

While ECON 1210 Introduction to Canadian Economic Issues and Policies and ECON 1220 Introduction to Global and Environmental Economic Issues and Policies, and SOC 1200 Introduction to Sociology are not required, they are highly recommended. Students are encouraged to select additional courses from the List of Core Courses and the List of Electives (see below).

Courses used towards a Labour Studies Major or Minor (Concentration) may not be used towards a Major/Minor (Concentration) or Honours in the second field.



	<ul style="list-style-type: none"> <li>• 9 credit hours of LABR courses at the 4000 level</li> <li>• 12 credit hours from LABR courses and/or the list of electives below</li> </ul>
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>	
LABR 1260 and LABR 1290	<ul style="list-style-type: none"> <li>• 6 credit hours of LABR courses at the 2000 level</li> <li>• 6 credit hours of LABR courses at the 3000 level</li> </ul>

**List of Electives**

The following courses may be selected to fulfill the requirements for a degree in Labour Studies (see the table above for details). Other courses might be chosen for this purpose, in accordance with students' individual interests, but require advance permission from the Labour Studies coordinator. Students are responsible for ensuring that all prerequisites have been met. In the following list (H) indicates an Honours course.

**Faculty of Arts**

## Economics

ECON 2280	Social Welfare and Human Resources	6
ECON 2350	Community Economic Development	3
ECON 2360*	Women in the Canadian Economy	6
ECON 2362	Economics of Gender	3
ECON 2500*	Labour and Technology (same as former Labour Studies LABR 2450)	3
ECON 3170	Introduction to Quantitative Methods in Economics	3
ECON 3300	Canadian Economic History	6
ECON 3360*	Labour Economics	6
ECON 3362	Labour Economics 1	3
ECON 3364	Labour Economics 2	3
ECON 3510	Industrial Relations (same as Labour Studies LABR 3510)	6
ECON 3660	Economic Ideas and Social Institutions	6
History		
HIST 2282	Inventing Canada (C)	3
HIST 2284	Democracy and Dissent: Contesting Canada (C)	3
HIST 2286	Modern Canada (C)	3
HIST 2670	History of Capitalism (M)	3
HIST 2671	Histoire du capitalisme (M)	3
HIST 2680	A History of Socialism from the French Revolution to the Present (M)	3
HIST 2690*	The Common People in Industrial Society (G)	6
HIST 2710	Women in History (G)	6
HIST 2720	The World Since 1945 (G,M)	6
HIST 2970	Modern Canada: 1921 to the Present (C)	6
HIST 2971	Le Canada moderne: de 1921 à nos jours (C) (CUSB)	6
HIST 3050	Canada since 1945 (C)	6
HIST 3210	The History of Popular Radicalism in the Twentieth Century (M)	6
HIST 3570	History of Women in Canada (C)	6
HIST 3700	History of Working People and Labour Movements 1700 to the Present (G) (same as Labour Studies LABR 3700)	6
HIST 3730	A History of Western Canada (C)	6
HIST 3800	History of Winnipeg from 1870-2000 (C)	3
HIST 4030*	The History of Communism and Socialism since 1945 (M) (H)	6
Native Studies		
NATV 3320*	Aboriginal Organizations	3
Philosophy		
PHIL 2290	Ethics and Society	6
PHIL 2830	Business Ethics	3
PHIL 3710*	Critiques of Contemporary Society	6
Political Studies		
POLS 3470	Canadian Public Management	3



POLS 3570	Administrative Theory in the Public Sector	3
POLS 3810	Introduction to Marxism	3
POLS 4370	Comparative Public Administration (H)	3
POLS 4570*	Public Organizational Management (H)	6
POLS 4660	The State in the Economy (H)	6
019.487*	Government and Public Sector Unionism (H)	3
Psychology		
PSYC 3510*	Organizational Psychology	3
PSYC 3600*	Environmental Psychology	3
Sociology		
SOC 2290	Introduction to Research Methods	6
SOC 3370	Sociology of Work	3
SOC 3371	Sociologie du travail (CUSB)	3
SOC 3380	Power, Politics and the Welfare State	3
SOC 3470*	Political Sociology	3
SOC 3471	Sociologie politique (CUSB)	3
SOC 3820	Qualitative and Historical Methods in Sociology	3
SOC 3870*	Social Inequality	3
SOC 3871	Inégalités sociales (CUSB)	3
SOC 3890	Power and Inequality in Comparative Perspective	3
Women's and Gender Studies		
WOMN 2500	Race, Class and Sexuality	3
WOMN 3550	Feminist Community Organizing: Theories and Practices	3
<b>I.H. Asper School of Business (Faculty of Management)</b>		
Business Administration		
GMGT 2030	Administrative Theory	3
GMGT 2060	Management and Organizational Theory	3
GMGT 2080*	Introduction to Management and Organization Theory	3
GMGT 3030	Contemporary Social Issues in Business	3
GMGT 4210	Seminar in Management and Capitalism	3
HRIR 2440	Human Resource Management	3
HRIR 3430	Selected Topics in Industrial Relations	3
HRIR 3450	Labour and Employment Relations (or the former 027.341)	3
HRIR 4420	Compensation	3
HRIR 4480	Collective Bargaining and Administration	3
HRIR 4520	Comparative Industrial Relations and Human Resource Management	3
Interdepartmental Courses		
IDM 3000*	Aboriginal Business Context: Influences and Impacts	3
IDM 4090*	Aboriginal Business Leadership	3

\* Indicates course no longer offered.

### 8.18.3 Labour Studies -1000 Level

#### LABR 1260 Working for a Living Cr.Hrs.3

An introduction to the study of working lives in the contemporary world and the global transformation that has made working for wages central to human existence. Students may not hold credit for both LABR 1260 and the former LABR 1270 (153.127).

#### LABR 1290 Introduction to the Canadian Labour Movement Cr.Hrs.3

(Formerly 153.129) An introduction to the development of the contemporary working-class movement in Canada and to workplace issues today.

### 8.18.3 Labour Studies -2000 Level

#### LABR 2100 The Political Economy of Labour Cr.Hrs.3

This course examines the dynamics of work organization, the production and reproduction of labour power, labour

markets and class conflict in capitalist societies, with attention to contemporary Canada. Students may not hold credit for LABR 2100 and any of: LABR 2420 (153.242) or ECON 2420 (018.242). Prerequisite: [a grade of "C" or better in three credit hours of 1000 level Labour Studies] or written consent of the Labour Studies coordinator.

#### LABR 2300 Workers, Employers and the State Cr.Hrs.3

This course examines the social, economic and political contexts of work and the relations, rules and structures that shape the interactions between workers, employers and the state. Topics include workers' and management rights, the rights, obligations and functions of unions, the legal contexts of labour/management relations, and initiatives for increasing equity. Students may not hold credit for both LABR 2300 and the former LABR 3300. Prerequisite: [a grade of "C" or better in three credit hours of 1000 level Labour Studies] or written consent of the Labour Studies coordinator.

**LABR 2420 Economics of the Labour Process and Labour Relations Cr.Hrs.6**

(Formerly 153.242) An examination of theoretical approaches to paid and unpaid work, the organization of labour processes, the production and reproduction of labour, and labour markets in Canada today, as well as possible alternatives. Students may not hold credit for LABR 2420 (153.242) and any of: LABR 2100 or ECON 2420 (018.242). Prerequisite: [a grade of "C" or better in both LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)] or [a grade of "C" or better in six credit hours of 1000 level Economics].

**8.18.3 Labour Studies -3000 Level****LABR 3010 Labour Law Cr.Hrs.3**

(Formerly 153.301) An introduction to legislation and interpretation, legal procedures, and quasi-judicial boards as they concern the organization of trade unions, collective bargaining, settlement of disputes, labour standards, workers' compensation, unemployment insurance and human rights. Prerequisite: [a grade of "C" or better in both LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)] or [a grade of "C" or better in both HRIR 3450 (027.345) and 6 credit hours of other HRIR courses] or written consent of the Labour Studies coordinator.

**LABR 3030 Labour and the Bargaining Process Cr.Hrs.3**

(Formerly 153.303) A course to explain labour's involvement in the negotiation process including the mechanics and the theoretical issues of bargaining. The course focuses on contemporary issues. Prerequisite: [a grade of "C" or better in both LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)] or written consent of the Labour Studies coordinator.

**LABR 3050 Issues in Occupational Health and Safety and Workers' Compensation Cr.Hrs.3**

This course will explore historical, legal and political issues surrounding health and safety in Canadian workplaces with an emphasis on Manitoba. It will critically examine both the Workers' Compensation and the Workplace Health and Safety systems as they currently exist and review the role of workers, employers, unions and government in these processes. It will investigate various challenges and emerging issues in health and safety including but not limited to industrial disease, gender concerns, precarious employment and globalization. Prerequisite: [a grade of "C" or better in three credit hours of 1000 level Labour Studies] or [a grade of "C" or better in both HRIR 3450 (027.345) and an additional 6 credit hours of HRIR courses] or written consent of the Labour Studies coordinator.

**LABR 3060 Workplace Health and Safety Cr.Hrs.3**

(Formerly 153.306) An introduction to occupational health, industrial hygiene and industrial safety emphasizing the impact of chemical hazards on the body, the measure and control of hazards and the causes and prevention of industrial accidents. Prerequisite: [a grade of "C" or better in both LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)] or [a grade of "C" or better in both HRIR 3450 (027.345) and 6 credit hours of other HRIR courses] or written consent of the Labour Studies

coordinator.

**LABR 3070 Labour Relations and Occupational Health and Safety Law Cr.Hrs.3**

(Formerly 153.307) The economic costs of workplace injuries and sickness; the history of occupational health and safety laws and their implementation; the history and functions of workers' compensation; collective bargaining on health and safety. Prerequisite: [a grade of "C" or better in both LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)] or [a grade of "C" or better in both HRIR 3450 (027.345) and 6 credit hours of other HRIR courses] or written consent of the Labour Studies coordinator.

**LABR 3080 Labour and Community Organizing Cr.Hrs.3**

This course examines the theory and practice of collaborative community and labour organizing, with particular emphasis on Latin America, to identify the strengths and limitations of this approach for reviving unions, protecting workers' rights and advancing social justice. Prerequisite: [a grade of "C" or better in both LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)] or written consent of the Labour Studies coordinator.

**LABR 3090 Globalization and Labour Cr.Hrs.3**

An examination of the impact of global capitalism on the lives of workers (both paid and unpaid) in the Global South and North in the early 21st century. Using concepts of class, gender and "race," the course addresses key challenges facing working people, the crisis of workers' movements, and new movements emerging in response to this crisis. Prerequisite: written consent of instructor.

**LABR 3110 Special Studies in Labour Studies Cr.Hrs.3**

(Formerly 153.311) This course will vary from year to year depending on the needs of students and the interests of the instructor. Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Labour Studies] or written consent of the Labour Studies coordinator. As the course content will vary from year to year, students may take this course more than once for credit.

**LABR 3120 Special Studies in Labour Studies Cr.Hrs.3**

(Formerly 153.312) This course will vary from year to year depending on the needs of students and the interests of the instructor. Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Labour Studies] or written consent of the Labour Studies coordinator. As the course content will vary from year to year, students may take this course more than once for credit.

**LABR 3130 Employment Legislation and the Protection of Workers Cr.Hrs.3**

(Formerly 153.313) An examination of the legal rights and obligations of workers and employers, and the enforcement mechanisms for the non-unionized workplace, over the course of the employment relationship from hiring through to termination or retirement. Special emphasis will be placed on statutory and common law, personal employment contracts, wrongful and constructive dismissal, human rights legislation and jurisprudence. Prerequisite: [a grade of "C" or better in



both LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)] or [a grade of "C" or better in both HRIR 3450 (027.345) and 6 credit hours of other HRIR courses] or written consent of the Labour Studies coordinator.

**LABR 3140 Pensions and Benefits Cr.Hrs.3**  
(Formerly 153.314) The nature and role of pensions in the life cycle of workers and the issue of pension funds control on distribution. The role of non-wage benefits in the labour compensation package. Prerequisite: [a grade of "C" or better in both LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)] or [a grade of "C" or better in both HRIR 3450 (027.345) and 6 credit hours of other HRIR courses] or written consent of the Labour Studies coordinator.

**LABR 3200 Workers' Self-Management Cr.Hrs.3**  
(Formerly 153.320) An examination of historical and contemporary examples of self-managed workplaces and the theory of a participatory economy based on workers' self-management. Prerequisite: [a grade of "C" or better in LABR 3510 (153.351) or ECON 3510 (018.351)] or written consent of instructor.

**LABR 3210 Working People in Hard Times Cr.Hrs.3**  
What have recent changes in work and society meant for people who work for wages or who live with those who do? How did these changes happen? What do they mean for youth today? How do the growing demands of our jobs affect our lives with family and friends? How have employers' actions affected unions, and how have unions responded? This course will explore these questions and others that arise from them. Prerequisite: [a grade of "C" or better in three credit hours of 1000 level Labour Studies] or written consent of the Labour Studies coordinator.

**LABR 3220 Global Sweatshops, Global Struggles Cr.Hrs.3**  
This course explores the past and present of sweated work in various industries in the Global North and South. We explore circumstances that support sweatshops, including off-shoring and the new international division of labour; migrant, child and female labour forces; global supply chains and the role of retailers and contractors. We also compare and evaluate strategies to eliminate sweatshops, including NGO activities, government regulations, consumer boycotts and the international labour, student and social justice movements. Prerequisite: [a grade of "C" or better in three credit hours of 1000 level Labour Studies] or written consent of the Labour Studies coordinator.

**LABR 3400 Racism and Work Cr.Hrs.3**  
This course explores three central questions: What are racism and colonialism? How do racism and colonialism shape work in Canada? What strategies exist for combating racism at work, and which are most effective? Students may not hold credit for both LABR 3400 and LABR 3110 when titled "Racism and Work." Prerequisite: [a grade of "C" or better in three credit hours of 1000 level Labour Studies] or written consent of the Labour Studies coordinator.

**LABR 3510 Industrial Relations Cr.Hrs.6**  
(Formerly 153.351) A study of comparative employer-employee relationships in Canada and other selected countries as affected by market forces, social traditions, and

government action. Students may not hold credit for both LABR 3510 (153.351) and ECON 3510 (018.351). Prerequisite: [a grade of "C" or better in both LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)] or [a grade of "C" or better in six credit hours of 1000 level Economics].

**LABR 3700 History of Working People and Labour Movements 1700 to the Present (M) Cr.Hrs.6**  
(Formerly 153.370) A survey of working class history with emphasis upon the varieties of labour movements and trade unions. The course will refer to the social and political experience of working people in Great Britain, Europe and the United States and will devote one term to Canadian topics. Also offered as History HIST 3700. May not be held with HIST 3700 (011.370). Prerequisite: [a grade of "C" or better in six credit hours of Labour Studies or History] or written consent of the Labour Studies coordinator.

### 8.18.3 Labour Studies -4000 Level

**LABR 4110 Selected Topics in Labour Studies Cr.Hrs.3**

This course will vary from year to year depending on the needs of students and the interests of the instructor. Prerequisite: written consent of the Labour Studies coordinator. As the course content will vary from year to year, students may take this course more than once for credit.

**LABR 4510 Labour Studies Field Placement Seminar Cr.Hrs.3**

(Formerly 153.451) A seminar to be taken concurrently with LABR 4520 in which each student will relate theory and practice. Corequisite: LABR 4520. Prerequisite: formal declaration of the Labour Studies Advanced Major and written consent of the Labour Studies coordinator.

**LABR 4520 Labour Studies Field Placement Cr.Hrs.6**

(Formerly 153.452) An educationally directed field experience in which the student will undertake specific tasks and assignments in some aspects of labour relations. Field placement options include a labour union, professional association, employer, provincial department of labour, public archives. Corequisite: LABR 4510. Prerequisite: formal declaration of the Labour Studies Advanced Major and written consent of the Labour Studies coordinator.

## 8.19 Latin American Studies Program

**Program Coordinator:** Maria Ines Martinez  
**Program Office:** 424 Fletcher Argue Building  
**Telephone:** 204 474 9311  
**E-mail:** [Marines\\_Martinez@umanitoba.ca](mailto:Marines_Martinez@umanitoba.ca)

### 8.19.1 Program Information,

Through varied courses students may examine regions or periods of Latin American history. Emphasis is given to Mexican, Meso-American and Andean topics, Latin American civilizations including the pre-Columbian. Ethnic studies are also a major theme. Courses from Anthropology,



Economics, Geography, History, and Spanish are included. This cross-disciplinary program permits a student to gain a deeper understanding of the subject field without being restricted to one discipline. The program offers the option of a term in Mexico from January to April; information is available from the program coordinator.

A Minor (Concentration) in Latin American Studies consists of at least 18 credit hours from a **minimum of two different departments chosen from the following list.**

#### Faculty of Arts

Anthropology		
ANTH 2690	Peoples and Cultures of Contemporary Latin America (B)	3
Economics		
ECON 3390*	Development Economics	6
ECON 3392	An Introduction to Development Economics	3
ECON 3394	Development Economics: Problems and Policies	3
History		
HIST 2140	Colonial Latin America (A)	3
HIST 2150	Independent Latin America (A)	3
HIST 3020	South America Since 1945 (A)	3
HIST 3040	Mexico, Central America, and Cuba Since 1945 (A)	3
HIST 4870	Contemporary Latin America (A)	6
Spanish		
SPAN 2200	Spanish American Culture and Civilization	3
SPAN 2540	Spanish-American Literature 2	3
<b>Clayton H. Riddell Faculty of Environment, Earth, and Resources</b>		
Geography		
GEOG 2350*	Latin America (A)	6

\* Indicates course no longer offered.

Knowledge of the Spanish language is not required since the literature on Latin America in English is extensive and adequate. However, the Latin American literature courses offered by the Department of French, Spanish and Italian require a reading knowledge of Spanish.

For entry to the Minor (Concentration) in Latin American Studies, the prerequisite is a grade of "C" or better in six credit hours from the approved list.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

For course descriptions, see departmental listings.

## 8.20 Department of Linguistics

**Head:** Terry Janzen

**Campus Address/General Office:** 534 Fletcher Argue Building

**Telephone:** 204 474 9596

**Email Address:** [lingdpt@cc.umanitoba.ca](mailto:lingdpt@cc.umanitoba.ca)

**Website:** [umanitoba.ca/linguistics](http://umanitoba.ca/linguistics)

### 8.20.1 Program Information,

The linguistics approach to language is based on the analysis of sound, the structure of words and sentences, and the meanings they transmit. But it also has to deal with the way sounds change, words come and go, and meanings

shift. Linguistics is the humanities discipline that is closest to being a science in the generally accepted sense of the word. Partly because human language, the subject of linguistics, is almost entirely acquired subconsciously, it is a massive and intricate structure that is free to develop in accordance with natural rather than with consciously determined social laws.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in LING 1200 or written consent of the department head. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in LING 1200, or written consent of the department head.

### Other



In addition to its core concentration in *Linguistic Theory and Analysis* and such other areas of study as Applied Linguistics, Verbal Arts, etc., Linguistics also offers:

- A pre-professional concentration in *Applied Linguistic Science*, which will be of special interest to students planning a career in speech/language pathology; contact department general office for information; and

- A program in American Sign Language/English Interpretation, offered jointly with Red River College; see below for details.

Students intending to Major in Linguistics are strongly encouraged to undertake the in-depth study of a second language.

### 8.20.2 Linguistics

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
LING 1200 <sup>1</sup>	<ul style="list-style-type: none"> <li>• at least 9 credit hours chosen from the core courses<sup>2</sup> numbered at the 2000 level</li> <li>• at least 6 credit hours chosen from the core courses<sup>2</sup> numbered at the 3000 level</li> <li>• 9 additional credit hours of Linguistics</li> </ul>		
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
LING 1200 <sup>1</sup>	<ul style="list-style-type: none"> <li>• at least 12 credit hours chosen from the core courses<sup>2</sup> numbered at the 2000 level LING 3200 or LING 3300 or LING 3400</li> <li>• 6 additional credit hours chosen from the core courses<sup>2</sup> numbered at the 3000 level</li> <li>• 18 additional credit hours of Linguistics</li> </ul>		
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
LING 1200 <sup>1</sup>	<ul style="list-style-type: none"> <li>• at least 6 credit hours chosen from the core courses<sup>2</sup> numbered at or above the 2000 level</li> <li>• 6 additional credit hours of Linguistics</li> </ul>		
<p><b>NOTES:</b>  <sup>1</sup> Students are advised to take LING 1380 General Phonetics as early as possible in their program (ideally during their first year, in addition to LING 1200 Introduction to Linguistics) as this course is a prerequisite for many of the advanced courses.  <sup>2</sup> Not all of the core courses listed below will necessarily be offered every year; this includes even those at the 2000 level which are prerequisites for courses at the 3000 level. Students intending to Major in Linguistics are advised to plan their programs well in advance, and to consult the Linguistics department at the beginning of each academic year.</p>			

### Core Courses

LING 2200	Syntax	6
LING 2420	Phonology	3
LING 2440	Analytic Techniques	3
LING 2460	Morphology	3
LING 2640	Comparative Linguistics	3
LING 3120	Syntactic Theory	3
LING 3140	Phonological Theory	3
LING 3200	The Structure of a non-Indoeuropean Language	6
LING 3300	The Structure of ASL	6
LING 3400	Field Methods	6
LING 3800*	Seminar	6
LING 3820	Selected Topics	3
LING 3840	Special Topics in ASL	3

\* Indicates course no longer offered.

Program in Linguistics and American Sign Language/English Interpretation taught jointly with Red River College leading to a B.A. General Degree.

Students who wish to pursue this program must seek separate admission to both the University of Manitoba and Red River College.

Students must successfully complete all requirements for Deaf Studies and the American Sign Language/English



Interpretation Program at Red River College only. Specific courses (42 credit hours) completed in this program will be considered acceptable for university degree credit, will satisfy a humanities requirement and will become the declared Minor for purposes of the degree. For the purposes of satisfying the distribution requirement, completion of the

Deaf Studies Certificate will qualify as six hours in a field and completion of the Joint ASL Program will qualify as six hours in a field.

The entire joint program is described below:

**Deaf Studies Program (prerequisite) - RRC**

Course No.		Credit Hours
DSP-D101	American Sign Language 1	
DSP-D201	American Sign Language 2	
DSP-D300	American Sign Language 3	
		These 3 courses count as 6 credit hours
DSP-D100	Deaf Culture	3
DSP-D202	Deaf History	3
DSP-D301	Cross-cultural Interaction	(no U of M credit)
	Total Hours	12

**Deaf Studies Program (prerequisite) - U of M**

LING 1200	Introduction to Linguistics	6
ANTH 1220	Cultural Anthropology (A)	3
	or	
ANTH 1520	Critical Cultural Anthropology (A)	3
	Science	3
(In the Deaf Studies Certificate Program (RRC) and in Year 1 of the Joint Linguistics (U of M) and ASL (RRC) Program students must complete a 3 credit hour Science course for a total of 6 credit hours of Science. A minimum of 3 credit hours of the Science courses must be in mathematics, statistics, or physics. Students seeking a second degree are not required to complete a mathematics, statistics, or physics course.)		
	Total Hours	12

Following successful completion of this prerequisite year, a Certificate in Deaf Studies is awarded by Red River College and selection for continuation for the joint degree program is made by RRC and the Linguistics department.

**Linguistics (U of M) and American Sign Language/English Interpretation (RRC)**

**Year 1 RRC**

AEI-I320	Cross-language Processing in Interpretation	3
AEI-I120	Language Processing in Interpretation-English	3
AEI-I220	Language Processing in Interpretation-ASL	3
AEI-I101	English Comprehension and Expression	3
	Total Hours	12

**Year 1 - U of M**

LING 2200	Syntax	6
LING 2460	Morphology	3
LING 2740	Interpretation Theory	3
ENGL XXXX	English	6
	Science	3
(In the Deaf Studies Certificate Program (RRC) and in Year 1 of the Joint Linguistics (U of M) and ASL (RRC) Program students must complete a 3 credit		



	hour Science course for a total of 6 credit hours of Science. A minimum of 3 credit hours of the Science courses must be in mathematics, statistics, or physics. Students seeking a second degree are not required to complete a mathematics, statistics, or physics course.)	
	Total Hours	21
<b>Year 2 - RRC</b>		
AEI-A420	Advanced ASL	3
AEI-P120	Interpretation Lab 1	6
AEI-I290	Ethics 1	3
AEI-I390	Ethics 2	3
AEI-I280	Interpretation Settings 1	(no U of M credit)
AEI-I380	Interpretation Settings 2	(no U of M credit)
	Total Hours	15
<b>Year 2 - U of M</b>		
LING 3300	The Structure of ASL	6
LING XXXX	Linguistics elective	3
	Total Hours	9
<b>Year 3 - RRC</b>		
AEI-P220	Interpretation Lab 2	3
AEI-P500	Practicum	(no U of M credit)
AEI-P454	Practicum Seminar	(no U of M credit)
	Total Hours	3
<b>Year 3 - U of M</b>		
LING 3840	Special Topics in ASL	3
	UM Electives (non linguistics courses)	6
	(Before selecting the 6 credit hours of electives, contact the General Office to ensure the selection satisfies the subject field requirement.)	
	Total Hours	9

### 8.20.3 Linguistics -1000 Level

**LING 1200** Introduction to Linguistics Cr.Hrs.6  
(Formerly 126.120) Language as a communication system composed of sound, grammatical and semantic subsystems. Development of a theoretical framework. Exercises in a variety of languages.

**LING 1340** Semantics Cr.Hrs.3  
(Formerly 126.134) An introduction to linguistic approaches to meaning, with special emphasis on the analysis of lexical domains.

**LING 1360** Languages of Canada Cr.Hrs.3  
(Formerly 126.136) A survey of languages and linguistic problems encountered in North America, with particular attention to questions of relationship and classification. Examples will be drawn from both indigenous and immigrant languages.

**LING 1380** General Phonetics Cr.Hrs.3  
(Formerly 126.138) The articulatory and acoustic analysis of speech sounds. Transcription exercises in a variety of languages.

**LING 1420** Language and Gender Cr.Hrs.3  
(Formerly 126.142) In exploring the relationship between language and gender, this course addresses such questions as: how are gender differences manifested and perpetuated through language use?; is there such a thing as "women's language"?; how do gender differences influence communication between women and men?; how does gender interact with (for example) race, class and sexuality

with respect to language use? In addition, we consider issues of language structure, including sexism in English and

the relative success of gender-based language reform efforts.

**LING 1440** Rules of English Grammar Cr.Hrs.3  
(Formerly 126.144) What are the criteria that are used to distinguish "good" from "bad" grammar? What are the rules we need to know in order to speak and write "properly"? In focusing on basic concepts in traditional grammar, this course reviews parts of speech, the English tense system, sentence types (active vs. passive), question formation and types of embedded clauses. It examines the rules of traditional grammar and explores the linguistic structures that lie behind the rules. This course is not intended for students learning English; it presupposes native or near-native competence in English.

### 8.20.3 Linguistics -2000 Level

**LING 2200** Syntax Cr.Hrs.6  
(Formerly 126.220) Sentences are complex arrangements of words and other elements, and syntactic structures have long been at the centre of theoretical controversy. A typological survey of syntactic patterns, introducing formal and functional approaches to syntactic analysis. Prerequisite: [a grade of "C" or better in LING 1200 (126.120)] or written consent of instructor.

**LING 2420** Phonology Cr.Hrs.3  
(Formerly 126.242) Each language relies on a finite set of distinctive sounds. Based on physical features which are universal, sound systems are language-specific, abstract structures. Prerequisite: [a grade of "C" or better in LING 1200 (126.120)] or written consent of instructor.

**LING 2440** Analytic Techniques Cr.Hrs.3  
(Formerly 126.244) Techniques for recognizing the structure



of words and sentences in a variety of languages. The formulation of linguistic rules, especially at the interface of morphology and phonology. Prerequisite: [a grade of "C" or better in LING 1200 (126.120)] or written consent of instructor.

**LING 2460 Morphology Cr.Hrs.3**

(Formerly 126.246) The internal structure of words: the traditional distinction between inflection and derivation, types of word structures, word-formation rules, levels of word-formation. The relationship of morphology to phonology and syntax. Prerequisite: [a grade of "C" or better in LING 1200 (126.120)] or written consent of instructor.

**LING 2600 Verbal Art Cr.Hrs.3**

(Formerly 126.260) Puns, punchlines, slogans and the chant of the auctioneer are as much instances of verbal art as are rhetorical flourishes and formal literary structures. With spoken language as its major focus, this course draws on a variety of languages, sources and genres to study artistic and playful uses of language. Prerequisite: [a grade of "C" or better in LING 1200 (126.120)] or written consent of instructor.

**LING 2620 Language in Society Cr.Hrs.3**

(Formerly 126.262) Language is embedded in a social context: dialect variability, the choice of speech registers, the use of special-purpose languages, code-switching, sexual specialization are instances of language behaviour reflecting non-linguistic reality. Prerequisite: [a grade of "C" or better in LING 1200 (126.120)] or written consent of instructor.

**LING 2640 Comparative Linguistics Cr.Hrs.3**

(Formerly 126.264) Language change and its consequences; aspects of historical linguistics, language classification and linguistic prehistory. Examples from Indo-European and North American Indian languages. Prerequisite: [a grade of "C" or better in LING 1200 (126.120)] or written consent of instructor.

**LING 2720 Applied Linguistics Cr.Hrs.3**

(Formerly 126.272) The practical implications of linguistic analysis in such areas as the formal or informal acquisition of a second language, the establishment of standards for spoken and written usage, language maintenance and other aspects of language planning. Prerequisite: [a grade of "C" or better in LING 1200 (126.120)] or written consent of instructor.

**LING 2740 Introduction to Interpretation Theory Cr.Hrs.3**

(Formerly 126.274) A survey of interpretation theory, including specifics of language use and problems in the transfer of cultural context for both source and target language, the history of language awareness on the part of the interpreter, and the development of theories of interpretation. This course will draw heavily on the field of ASL/English interpretation for illustration. Prerequisite: [a grade of "C" or better in LING 1200 (126.120)] or written consent of instructor.

**LING 2800 Communication Disorders Cr.Hrs.3**

(Formerly 126.280) A general introduction to the major pathologies of speech, language and hearing as viewed against the background of normal linguistic structures and functions. The distinction between mechanically- and

neurologically-based disorders is illustrated in terms of aetiology, diagnosis and approaches to treatment. Prerequisite: [a grade of "C" or better in LING 1200 (126.120)] or written consent of instructor.

**LING 2830 Linguistic Anatomy and Physiology 1 Cr.Hrs.3**

(Formerly 126.283) An intensive survey of the principal organs of speech and hearing, their embryology, and the general features of their evolutionary history. Some consideration will also be given to their pathological impairment. Prerequisite: [a grade of "C" or better in both LING 1200 (126.120) and LING 1380 (126.138)] or written consent of instructor.

**LING 2850 Linguistic Anatomy and Physiology 2 Cr.Hrs.3**

(Formerly 126.285) A survey of the structures of the central and peripheral nervous systems as they relate to the production and perception of speech and the processing of language. Includes a survey of linguistic aphasiology and a review of neurological deficits associated with abnormal language behaviour. Prerequisite: [a grade of "C" or better in both LING 1200 (126.120) and LING 1380 (126.138)] or written consent of instructor.

**LING 2860 Language Acquisition Cr.Hrs.3**

(Formerly 126.286) The study of first language acquisition from infancy through childhood. Aspects of phonology, morphology, pragmatics and syntax acquisition are discussed, as well as formal theories of acquisition, second language and bilingual acquisition, atypical development and the relationship of language acquisition with literacy. Also offered as PSYC 2860. Students may not hold credit for both LING 2860 (126.286) and PSYC 2860. Prerequisite: [a grade of "C" or better in LING 1200 (126.120) or PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of instructor.

**LING 2880 Acoustic Phonetics Cr.Hrs.3**

(Formerly 126.288) The physical principles involved in the production, propagation and reception of sound. The subjective characteristics of sounds (loudness, pitch and quality) are related to their objective parameters (intensity, frequency and spectrum). The physical methods and the types of equipment used to analyze the basic physical properties of sounds will be demonstrated. Prerequisite: [a grade of "C" or better in both LING 1200 (126.120) and LING 1380 (126.138)] or written consent of instructor.

**8.20.3 Linguistics -3000 Level**

**LING 3120 Syntactic Theory Cr.Hrs.3**

(Formerly 126.312) Formal and functional analyses of specific syntactic issues, such as the representation of grammatical relations, the formulation and explanation of universals, the "learnability criterion" as a test for theoretical adequacy and the rôle of semantics and pragmatics in syntactic theory. Prerequisite: [a grade of "C+" or better in LING 2200 (126.220)] or written consent of instructor.

**LING 3140 Phonological Theory Cr.Hrs.3**

(Formerly 126.314) The nature of phonological representations: prosodic hierarchies, multi-tiered structures,



the underspecification of segments. Types of phonological rules, rule ordering, the cycle. Prerequisite: [a grade of "C+" or better in LING 2420 (126.242)] or written consent of instructor.

**LING 3200** The Structure of a non-Indoeuropean Language Cr.Hrs.6

(Formerly 126.320) Every "new" language challenges accepted doctrine and helps us to evaluate competing hypotheses: in this course, a non-Indoeuropean language (which may vary from Hua to Hungarian) is systematically explored on the basis of field records and descriptions which have become classics. Prerequisite: [a grade of "C+" or better in each of LING 2200 (126.220) and LING 2420 (126.242) and LING 2440 (126.244)] or written consent of instructor.

**LING 3300** The Structure of ASL Cr.Hrs.6

(Formerly 126.330) An examination of ASL as a signed, as opposed to spoken, language. Topics include phonetic, phonological, morphological and syntactic structures. Prerequisite: [a grade of "C+" or better in each of LING 1200 (126.120) and LING 2200 (126.220) and LING 2460 (126.246)] or written consent of instructor.

**LING 3400** Field Methods Cr.Hrs.6

(Formerly 126.340) Working with a speaker of an unfamiliar (and, usually, unrecorded) language, students are apprenticed in the collection, analysis and interpretation of raw data. Prerequisite: [a grade of "C+" or better in each of LING 2200 (126.220) and LING 2420 (126.242) and LING 2440 (126.244)] or written consent of instructor.

**LING 3820** Special Topics Cr.Hrs.3

(Formerly 126.382) Topics of current interest in the language sciences. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**LING 3840** Special Topics in ASL Cr.Hrs.3

(Formerly 126.384) Topics of current interest in ASL linguistics. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take

this course more than once for credit.

**LING 3920** Special Studies Cr.Hrs.3

(Formerly 126.392) Supervised study. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**8.21 Medieval and Renaissance Studies Program**

**Program Advisor:** Roisin Cossar

**Program Office:** 454 Fletcher Argue Building

**Telephone:** 204 474 8885

**8.21.1 Program Information,**

The millennium from the end of the Roman empire to the Renaissance is the formative period of European civilization. The Middle Ages and the Dark Ages were periods of human drama full of change and growth and a struggle to regain a civilized way of life. The Age of Chivalry with its crusades, the flowering of the arts and architecture, and the emergence of new philosophical concepts and ideologies found culmination in the Renaissance. For those interested in the pre-modern world, this program permits a broad approach to the subject.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

The following entries contain information which is not contained in Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.

**Major Program**

For entry to the Major, the prerequisite is a grade of "C" or better in 12 credit hours considered relevant to the Major by the program advisor.

**A) General Major in Medieval and Renaissance Studies** consists of 36 credit hours selected as follows:

- Nine credit hours in either Latin or Greek
- Six credit hours from the following History courses:

HIST 2080	The Byzantine Empire and the Slavic World (D)	3
HIST 2420	The Medieval World (D)	6
011.206*	The Emergence of the Medieval World (D)	3
011.207*	The Early and High Middle Ages (D)	3
011.209*	The Middle Ages in Decline (D)	3

\* Indicates course no longer offered.

- 21 credit hours in courses dealing with the Medieval and/or Renaissance world, including a minimum of six credit hours to be selected from each of the following groups (a detailed list of courses may be obtained from the program advisor):

*Group 1:* History, Philosophy, Religion

*Group 2:* Literature, Language, Fine Arts (including Music)



**B) Advanced Major in Medieval and Renaissance Studies** consists of 12 credit hours in addition to the above, of which six must be in a modern language. The remaining six credit hours may be selected from Group 1 or Group 2.  
**Minor (Concentration) Program**

For entry to the Minor (Concentration) program, the prerequisite is a grade of “C” or better in six credit hours considered relevant to the Minor by the program advisor.

A Minor (Concentration) in Medieval Studies will consist of 18 credit hours, and must include History course HIST 2420 The Medieval World (D) (6). The remaining 12 credit hours may be selected from Group 1 or Group 2, or from courses in either Latin or Greek. If Latin or Greek courses are chosen, a minimum of six credit hours is required in either Latin or Greek.

**Other**

Students should note that courses used towards the Major(s) or Minor (Concentration) in this area may not be used for Major, Minor (Concentration) or Honours in a second field.

## 8.22 Department of Native Studies

**Head:** Renate Eigenbrod

**Campus Address/General Office:** 204 Isbister Building

**Telephone:** 204 474 9266

**Email Address:** [native\\_studies@umanitoba.ca](mailto:native_studies@umanitoba.ca)

**Website:** [umanitoba.ca/native\\_studies](http://umanitoba.ca/native_studies)

### 8.22.1 Program Information,

Courses in this department examine the history, art, literature, and the philosophical and religious traditions of Canada’s original inhabitants. Other courses explore the legal, political, and health care systems in relation to Aboriginal people. Aboriginal and non-Aboriginal students may specialize in either Native studies or Native languages, Cree and Ojibway.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree,

see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of “C” or better in NATV 1200 or “C” or better in both NATV 1220 and NATV 1240. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

#### A) Native Studies

For entry to the Minor (Concentration), the prerequisite is a grade of “C” or better in one of NATV 1200 or “C” or better in both NATV 1220 and NATV 1240.

#### B) Native Languages

For entry to the Minor (Concentration), the prerequisite is a grade of “C” or better in both NATV 1250 and NATV 1260; or “C” or better in both NATV 1270 and NATV 1280; or “C” or better in NATV 2250, and both NATV 2272 and NATV 2274 (the former NATV 2270).

### Other

Students will be permitted to register for a Major in Native Studies and a Minor in Native Languages but may not complete both a Major and Minor in Native Studies.

Before registering for approved cross-listed courses, students should consult the *Calendar* or the departments regarding prerequisites for specific courses.

### 8.22.2 Native Studies

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>NATIVE STUDIES MAJOR<sup>1</sup> TOTAL: 30 CREDIT HOURS</b>			
NATV 1200 or NATV 1220 and NATV 1240	<ul style="list-style-type: none"> <li>• 18 credit hours in Native Studies numbered at the 2000 level or above<sup>1</sup></li> <li>• 6 credit hours in Native Studies or Native Language courses numbered at the 3000 level or above.</li> </ul>		
<b>NATIVE STUDIES ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			



NATV 1200 or NATV 1220 and NATV 1240	<ul style="list-style-type: none"> <li>• 21 credit hours in courses offered by Native Studies<sup>2</sup></li> <li>• 12 credit hours in courses offered by Native Studies numbered at the 3000 level</li> <li>• 9 credit hours in courses offered by Native Studies numbered at the 4000 level</li> </ul>		
<b>NATIVE STUDIES MINOR (CONCENTRATION)<sup>5</sup> TOTAL: 18 CREDIT HOURS</b>			
NATV 1200 or NATV 1220 and NATV 1240	12 credit hours in courses offered by Native Studies numbered at the 2000 level or above <sup>2</sup>		
<b>NATIVE LANGUAGES MINOR (CONCENTRATION)<sup>5</sup> (OPTION 1) TOTAL: 18 CREDIT HOURS</b>			
NATV 1250 and NATV 1260 or NATV 1270 and NATV 1280	NATV 2250, or both NATV 2272 and NATV 2274	NATV 2300 and NATV 2320, or NATV 2310 and NATV 2330, or 6 credit hours approved by the department <sup>3,4</sup>	
<b>NATIVE LANGUAGES MINOR (CONCENTRATION)<sup>5</sup> (OPTION 2) TOTAL: 18 CREDIT HOURS</b>			
NATV 2250, or both NATV 2272 and NATV 2274	NATV 2300 and NATV 2320, or NATV 2310 and NATV 2330	6 credit hours in Native languages or 6 credit hours approved by the department <sup>3,4</sup>	
<b>NOTES:</b>			
The following courses count as Native Language courses: NATV 1250, NATV 1260, NATV 1270, NATV 1280, NATV 1290, NATV 2250, NATV 2272, NATV 2274, NATV 2300, NATV 2310, NATV 2320, NATV 2330 and NATV 3300.			
<sup>1</sup> Students may substitute up to 12 credit hours from the approved cross-listed courses and/or 12 hours of Native Language courses numbered at the 1000 or 2000 level in lieu of Native Studies but must have six credit hours in Native Studies or Native Languages courses offered by Native Studies numbered at the 3000 level or above.			
<sup>2</sup> Students may substitute up to six credit hours from the list of approved courses and/or six hours of Native Language courses in lieu of Native Studies courses.			
<sup>3</sup> No more than 12 credit hours may be taken from NATV 1200, NATV 1220, NATV 1240, NATV 1250, NATV 1260, NATV 1270, NATV 1280, NATV 2250, NATV 2272, NATV 2274.			
<sup>4</sup> Six credit hours may be from related linguistics courses approved by the department.			
<sup>5</sup> Students who wish to declare a Minor should consult with the department head.			

### 8.2.2.3 Native Studies Aboriginal Governance Stream,

Students interested in pursuing an Advanced Major in Aboriginal Governance are required to take a Minor in Business. The requirements for both are set out below. For , including any prerequisites and/ or restrictions see the appropriate departmental listing in this *Calendar*. The conditions for entry, continuation and graduation requirements may be found in [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

#### Major Program

For entry to the Advanced Major, Aboriginal Governance Stream, the prerequisite is a grade of "C" or better in NATV 1200 or a "C" or better in both NATV 1220 and NATV 1240.

For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

#### Minor Program

For entry to the required Minor in Business for students who wish the Aboriginal Governance Stream, the prerequisite is 6 credit hours from ACC 1100, GMGT 2030, HRIR 2440 or MKT 2210 with a grade of "C" or better in each.

For information on this program contact the Department of Native Studies.

### 8.2.2.4 Native Studies Aboriginal Governance Stream

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>NATIVE STUDIES ADVANCED MAJOR - ABORIGINAL GOVERNANCE STREAM TOTAL: 51 CREDIT HOURS</b>			
NATV 1200 or NATV 1220 and NATV 1240	<ul style="list-style-type: none"> <li>• ECON 1010 or ECON 1210 or ECON 1220</li> <li>• NATV 2110, POLS 2070, STAT 1000</li> <li>• 12 credit hours from Political Governance courses: NATV 2220, NATV 3310, NATV 3280, NATV 3370, NATV 4200, POLS 4150</li> <li>• 12 credit hours from Aboriginal Business and Economics courses: NATV 3120, NATV 3160, NATV 3350, NATV 4320</li> <li>• 6 credit hours from Traditional Knowledge courses: NATV 2030, NATV 3330, NATV 4220,</li> </ul>		



	NATV 4230
<b>REQUIRED MINOR IN BUSINESS FOR THOSE STUDENTS IN A DECLARED ABORIGINAL GOVERNANCE STREAM<sup>1</sup> TOTAL:</b> 18 CREDIT HOURS	
ACC 1100, GMGT 2030, HRIR 2440, MKT 2210	6 credit hours from: ACC 1110, COMP 1260, ENTR 2010, ENTR 2020, GMGT 2010, GMGT 3300, LEAD 2010, FIN 2200, FIN 3470, HRIR 4410, MIS 2000
<b>NOTE:</b> <sup>1</sup> Students must ensure that all course prerequisites are met when selecting courses for the Minor.	

### List of Approved Courses in Native Studies

Approved courses from other faculties/schools for partial fulfilment of the Major and Minor in Native Studies are given below

#### Asper School of Business

IDM 3000*	Aboriginal Business Context: Influences and Impacts	3
IDM 4090*	Aboriginal Business Leadership	3

#### School of Art

FAAH 2090	Art of the North American Aboriginal Peoples	3
FAAH 3430	Inuit Art	3
054.358*	Inuit Culture and Art	3
054.373*	Art of the North American Native Peoples	3

#### Marcel A. Desautels Faculty of Music

033.386*	Topics in Music (when the topic is "Music in Traditional Aboriginal Society")	3
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\* Indicates course no longer offered.

(032.120).

### 8.22.5 Native Studies -1000 Level

#### NATV 1000 Orientation Course: The Colonizers and the Colonized Cr.Hrs.3

(Formerly 032.100) The course which is offered as part of the summer session consists of an introduction to the colonization process as it regards Aboriginal people and the processes of decolonization undertaken by the people since 1970. Prerequisite: this is a special course designed for first year entering Aboriginal students. Registration is restricted and written consent must be obtained from the instructor prior to registration.

#### NATV 1200 The Native Peoples of Canada Cr.Hrs.6

(Formerly 032.120) A survey of the political, social, and economic situations of the contemporary Indian, Métis, and Inuit peoples of Canada. Students may not hold credit for both NATV 1200 (032.120) and any of: NATV 1220 (032.122) or NATV 1240 (032.124).

#### NATV 1220 The Native Peoples of Canada, Part 1 Cr.Hrs.3

(Formerly 032.122) A survey of the political, social, and economic situations of the contemporary Indian, Métis, and Inuit peoples of Canada from pre-contact to 1945. Students may not hold credit for both NATV 1220 (032.122) and NATV 1200 (032.120).

#### NATV 1240 The Native Peoples of Canada, Part 2 Cr.Hrs.3

(Formerly 032.124) A survey of the political, social, and economic situations of the contemporary Indian, Métis, and Inuit peoples of Canada from 1945 to the present. This course may include a field trip component. Students may not hold credit for both NATV 1240 (032.124) and NATV 1200

#### NATV 1250 Introductory Cree 1 Cr.Hrs.3

(Formerly 032.125) Practical course intended for students who are not fluent in Cree. Emphasis will be on oral work for the purpose of learning basic sounds and grammatical patterns. Some attention will be given to the structural differences between Cree and English. Regular attendance and active participation are obligatory. This course is a prerequisite for NATV 1260 Introductory Cree 2.

#### NATV 1260 Introductory Cree 2 Cr.Hrs.3

(Formerly 032.126) Continuation of NATV 1250 (032.125) Introductory Cree 1. Practical course intended for students who are not fluent in Cree. Emphasis will be on oral work for the purpose of learning basic sounds and grammatical patterns. Some attention will be given to the structural differences between Cree and English. Regular attendance and active participation are obligatory. Prerequisite: a grade of "C" or better in NATV 1250 (032.125).

#### NATV 1270 Introductory Ojibway 1 Cr.Hrs.3

(Formerly 032.127) Practical course intended for students who are not fluent in Ojibway. Emphasis will be on oral work for the purpose of learning basic sounds and grammatical patterns. Some attention will be given to the structural differences between Ojibway and English. Regular attendance and active participation are obligatory. This course is a prerequisite for NATV 1280 Introductory Ojibway 2.

#### NATV 1280 Introductory Ojibway 2 Cr.Hrs.3

(Formerly 032.128) Continuation of NATV 1270 (032.127) Introductory Ojibway 1. Practical course intended for students who are not fluent in Ojibway. Emphasis will be on oral work for the purpose of learning basic sounds and grammatical patterns. Some attention will be given to the



structural differences between Ojibway and English. Regular attendance and active participation are obligatory. Prerequisite: a grade of "C" or better in NATV 1270 (032.127).

**NATV 1290** Introductory Inuktitut Cr.Hrs.3  
(Formerly 032.129) A practical course in conversational Inuktitut focusing on basic grammatical structures, everyday vocabulary, and using syllabics. This course is offered as part of the Pangnirtung Summer Travel/Study Program. Prerequisite: written consent of department head.

### 8.22.5 Native Studies -2000 Level

**NATV 2000** Selected Topics in Native Studies Cr.Hrs.3

(Formerly 032.200) The content of this course will vary. Depending on instructor, this course may have a field component. Contact the Department of Native Studies for details. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**NATV 2014** UW 29.1010 (2000 Level) Cr.Hrs.3  
Campus Manitoba course.

**NATV 2020** The Métis of Canada Cr.Hrs.3  
(Formerly 032.202) A history of the Métis of Canada.

**NATV 2030** Working with Aboriginal Elders Cr.Hrs.3  
This course provides an opportunity for students to develop culturally relevant community service skills in Native Studies and to acquire an understanding of traditional teachings by Elders from the Cree and Ojibway traditions. The course includes participation in the annual Elders and Traditional Teachers Gathering conference. Students may not hold credit for both NATV 2030 and NATV 2000 when titled "Working with Elders." Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of instructor or department head.

**NATV 2040** The Native Peoples of the Northern Plains Cr.Hrs.3  
(Formerly 032.204) An interdisciplinary study of the history and traditional cultures of the Native Peoples of the Northern Plains. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**NATV 2060** The Native Peoples of the Eastern Woodlands Cr.Hrs.3  
(Formerly 032.206) An interdisciplinary study of the history and traditional cultures of the Native peoples of the Great Lakes and Maritimes. Emphasis will be on the Anishinabe (Ojibway, Saulteaux). Depending on instructor, this course may have a field component. Contact the Department of Native Studies for details. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or

written consent of department head.

**NATV 2070** The Native Peoples of the Subarctic Cr.Hrs.3  
(Formerly 032.207) This course will examine the subsistence organization, social organization and cosmology of both the Cree and Dene. We will further examine the history of the aboriginal-European encounter and the impact of colonialism on contemporary political and land rights struggles. While we will consider the region as a whole, we will specifically focus on the James Bay Cree and Rock Cree of Northern Manitoba, and secondly on the Saisi Dene, north of the Churchill River. This course may include a field trip component. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**NATV 2080** Inuit Society and Culture Cr.Hrs.3  
(Formerly 032.208) An examination of the subsistence organization, social organization, cosmology and ceremonies of Inuit from a regional and comparative perspective. While this course will focus on Eastern Arctic Inuit comparison will also be made to Greenlanders, Inuvialuit, Inupiat and Yup'ik. We will conclude the course by examining colonial history and the rise of Nunavut. The course may include a field trip component. Students may not hold credit for both NATV 2080 (032.208) and NATV 2000 (032.200) with the topic "Inuit Society and Culture." Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**NATV 2100** Aboriginal Spirituality Cr.Hrs.3  
(Formerly 032.210) This course allows students to work with Aboriginal elders or traditional teachers, exposing them to cultural and spiritual concepts. Emphasis is on Anishinabe or Cree teachings, though other First Nations approaches may be offered. This course may include a field trip component. Students may not hold credit for both NATV 2100 (032.210) and NATV 3000 (032.300) when titled "Aboriginal Wisdom and Spirituality."

**NATV 2110** Introduction to Aboriginal Community Development Cr.Hrs.3  
Community development is the main strategy available for achieving the level of governance that most Aboriginal communities seek. It involves a plan that captures the spirit of a community and stirs the imagination of the members. Obstacles include lack of time, resources, vision and understanding of what a community plan for development can accomplish. This course will examine community development within an Aboriginal context. Students may not hold credit for both NATV 2110 and NATV 2000 (032.200) when titled "Introduction to Aboriginal Community Development." Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**NATV 2220** Native Societies and the Political Process Cr.Hrs.3  
(Formerly 032.222) An analysis of contemporary Canadian (and U. S.) political and administrative processes as they affect Native people. Depending on instructor, this course



may have a weekend field trip. Contact the Department of Native Studies for details.

**NATV 2250 Intermediate Cree Cr.Hrs.6**

(Formerly 032.225) Continuation of introductory courses and entry-level course for fluent speakers. Development of conversational fluency. Cree orthography, composition and translation, introduction to the linguistic structure of Cree. Prerequisite: [a grade of "C" or better in both NATV 1250 (032.125) and NATV 1260 (032.126)] or [Matriculation Cree] or written consent of instructor or department head.

**NATV 2270 Intermediate Ojibway Cr.Hrs.3**

(Formerly 032.227) Continuation of introductory courses and entry-level course for fluent speakers. Development of conversational fluency. Ojibway orthography, composition and translation, introduction to the linguistic structure of Ojibway. Prerequisite: [a grade of "C" or better in NATV 1270 (032.127) and NATV 1280 (032.128)] or [Matriculation Ojibway] or written consent of instructor or department head.

**NATV 2272 Intermediate Ojibway 1 Cr.Hrs.3**

This course is a continuation of Introductory Ojibway 1 and 2 and the entry-level course for fluent speakers. It focuses on development of conversational fluency, Ojibway orthography, composition and translation. Students may not hold credit for both NATV 2272 and the former NATV 2270 (032.227). Prerequisite: [a grade of "C" or better in both NATV 1270 (032.127) and NATV 1280 (032.128)] or [Matriculation Ojibway] or written consent of instructor or department head.

**NATV 2274 Intermediate Ojibway 2 Cr.Hrs.3**

This course is a continuation of Intermediate Ojibway 1. It focuses on the further development of conversational fluency, Ojibway orthography, and translation and also offers an introduction to the linguistic structure of Ojibway. Students may not hold credit for both NATV 2274 and the former NATV 2270 (032.227). Prerequisite: [a grade of "C" or better in NATV 2272] or written consent of instructor or department head.

**NATV 2300 Cree Literature Cr.Hrs.3**

(Formerly 032.230) A survey of Cree literature based on the extensive study of particular texts in cultural, historical and spiritual contexts. Prerequisite: [a grade of "C" or better in NATV 2250 (032.225) or NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**NATV 2310 Ojibway Literature Cr.Hrs.3**

(Formerly 032.231) A survey of Ojibway (Eastern, Western, Chippewa, Saulteaux, Odawa, others) literature based on the extensive study of particular texts in cultural, historical and spiritual contexts. Prerequisite: [a grade of "C" or better in both NATV 2272 and NATV 2274] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or [a grade of "C" or better in NATV 1200 (032.120) or the former NATV 2270 (032.227)] or written consent of department head.

**NATV 2320 Structure of the Cree Language Cr.Hrs.3**

(Formerly 032.232) A detailed structural analysis of Cree with special attention to the problem of dialect variation and to the contrastive analysis of Cree and English. Prerequisite:

[a grade of "C" or better in NATV 2250 (032.225)] or written consent of department head.

**NATV 2330 Structure of the Ojibway Language Cr.Hrs.3**

(Formerly 032.233) A detailed structural analysis of Ojibway with special attention to the problem of dialect variation and to the contrastive analysis of Ojibway and English. Prerequisite: [a grade of "C" or better in both NATV 2272 and NATV 2274] or [a grade of "C" or better in the former NATV 2270 (or 032.227)] or written consent of department head.

**NATV 2410 Canadian Native Literature Cr.Hrs.3**

(Formerly 032.241) A study of literature by and about Canadian Native peoples, Indian mythology, personal narratives, protest literature, poetry, plays and novels will be explored to give an appreciation of Native philosophies, experiences, traditions and cultures. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**NATV 2420 Inuit Literature in Translation Cr.Hrs.3**

(Formerly 032.242) An examination of various literary forms produced by Inuit including traditional myths and songs, life histories, contemporary novels and modern political writings. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of instructor or department head.

**NATV 2430 Indigenous Women's Stories Cr.Hrs.3**

This course will investigate through the medium of literature - life writing, fiction, creative non-fiction, poetry - and film experiences of Indigenous women in North America, particularly in Canada, as articulated in their own voices. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of instructor or department head.

**NATV 2450 Images of Indian People in North American Society Cr.Hrs.3**

(Formerly 032.245) Will trace the portrayal of Indian peoples 1492 to the present. Emphasis will be on material and theoretical depictions, and will require reading as well as study of art pieces, tourist objects, cartoons, movies and so forth. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**8.22.5 Native Studies -3000 Level**

**NATV 3000 Selected Topics Cr.Hrs.3**

(Formerly 032.300) The content of this course will vary. Contact the department for a course description. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**NATV 3100 Aboriginal Healing Ways Cr.Hrs.3**

(Formerly 032.310) This course allows students to work with Aboriginal elders or traditional teachers on concepts of



healing and wellness. Emphasis is on Anishinabe or Cree healing practices, though other First Nations approaches may be offered. This course may include a field trip component. Students may not hold credit for both NATV 3100 (032.310) and NATV 3000 (032.300) when titled "Exploring Aboriginal Healing." Prerequisite: [a grade of "C" or better in NATV 2100 (032.210)] or written consent of the department head.

**NATV 3110 Indigenous Environmental Discourse Cr.Hrs.3**

This course is designed to further an in-depth understanding of Indigenous perspectives on the environment (rural and urban) through the critical analysis of poetry, essays, fiction, film and art by Indigenous writers, scholars and (media) artists. Prerequisite: [a grade of "C" or better in NATV 2410 (032.241)] or written consent of instructor or department head.

**NATV 3120 Exploring Aboriginal Economic Perspectives Cr.Hrs.3**

Explore the impact of legal, constitutional and governance issues on the internal and external operating environment affecting economic development by Aboriginal peoples. Current strategies for successful partnerships between industry and Aboriginal peoples will also be examined. Students may not hold credit for NATV 3120 and any of: ECON 2350 (018.235) or IDM 3000 (098.300) or the former NATV 4310 (032.431). Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of instructor or department head.

**NATV 3130 International Indigenous Literatures Cr.Hrs.3**

This course will compare selected texts by Indigenous authors from Canada, U.S.A., New Zealand and Australia. Following the history of the respective literature in each country, it will examine the role of Indigenous writing – poetry, fiction, plays – in de/colonization processes in settler societies. Prerequisite: [a grade of "C" or better in NATV 2410 (032.241)] or written consent of instructor or department head.

**NATV 3140 Aboriginal Resistance Writing Cr.Hrs.3**

This course will trace and explore the history and practice of Canadian Aboriginal resistance writing. Attention will be given to political and creative writing in contrapuntal response to the Canadian colonial situation. Classes will be based largely on seminar discussions and readings. Prerequisite: [a grade of "C" or better in NATV 2410 (032.241)] or written consent of instructor or department head.

**NATV 3150 Residential School Literature Cr.Hrs.3**

This course focuses on the analysis of literary responses to Residential Schools in the form of memoirs, fiction, poetry, and plays; it will also include aesthetic representations of school experiences through other media like film and art. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of instructor or department head.

**NATV 3160 Fundraising for Aboriginal Organizations Cr.Hrs.3**

This course examines effective fundraising skills as critical for the longevity of many programs in the Aboriginal community. While government fundraising is an important source, understanding grantsmanship and other funding strategies are critical for sustained program existence and effective use of scarce human and financial resources. Students may not hold credit for both NATV 3160 and NATV 3000 (032.300) when titled "Financing Strategies for Aboriginal Non-Profit Initiatives." Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**NATV 3240 Native Medicine and Health Cr.Hrs.3**

(Formerly 032.324) The health, disease, and medical practices of North American Native peoples. A survey of the health and health care of North American Native people from pre-contact to modern times. Special attention will be paid to traditional concepts of health and healing practices.

**NATV 3270 The Métis Nation: The Modern Era Cr.Hrs.3**

(Formerly 032.327) A study of the dispossession of the Métis Nation after 1870, their resurgence in the 1950s and contemporary issues affecting Métis people in Canada. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**NATV 3280 Aboriginal Peoples and the Canadian Justice System Cr.Hrs.3**

(Formerly 032.328) A study of Native peoples' relationships to civil and criminal law in modern Canadian society. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**NATV 3290 Independent Research Cr.Hrs.3**

(Formerly 032.329) Supervised research or field work. Results will be presented in a form appropriate to the subject of study. Written consent of department head, based on a written research proposal, must be obtained before registration. As the course content will vary from year to year, students may take this course more than once for credit.

**NATV 3300 Native Language Planning and Development Cr.Hrs.3**

(Formerly 032.330) The social and political setting of the indigenous languages of North America. Issues and methods in language policy development, maintenance, standardization, and innovation. Prerequisite: a grade of "C" or better in six credit hours of Native Languages at the second year level.

**NATV 3310 Canadian Law and Aboriginal Peoples Cr.Hrs.3**

(Formerly 032.331) A survey of laws relating to Native peoples in Canada. Topics will include legal aspects of aboriginal title, Indian treaties, Indian and Métis land claims, the Indian Act, hunting and fishing rights, self-government, and constitutional issues. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or



written consent of department head.

**NATV 3330** Aboriginal People, Science and the Environment Cr.Hrs.3

(Formerly 032.333) This course will examine current Aboriginal environmental and development issues both locally and internationally. The basic principles of Aboriginal philosophy and how present forms of development on Aboriginal land has conflicted with this philosophy will be examined. Prerequisite: written consent of department head.

**NATV 3350** Aboriginal Organizations Cr.Hrs.6

(Formerly 032.335) A study of local, regional and national Aboriginal organizations in contemporary North America and their interaction with government and private agencies. A field component may be included depending on instructor. Contact the Department of Native Studies for details. Students may not hold credit for both NATV 3350 (032.335) and the former NATV 3320 (032.332). Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

**NATV 3360** Aboriginal Women of Canada Cr.Hrs.3

(Formerly 032.336) This course explores and critically examines from interdisciplinary and post-colonial perspectives historical and contemporary processes, representation, experiences and social issues specific to Aboriginal women of Canada. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of instructor or department head.

**NATV 3370** Political Development in the North Cr.Hrs.3

(Formerly 032.337) An examination of historical and contemporary political processes in Nunavut, Northwest Territories, and Yukon including the negotiation and implementation of Aboriginal land claims. Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of instructor.

**NATV 3380** Cultural Constructions of Gender in Canadian Aboriginal Societies Cr.Hrs.3

(Formerly 032.338) An examination of the theoretical issues that surround the cultural construction of gender leading into detailed ethnographic and historical case studies. Prerequisites: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of instructor.

**NATV 3390** Cultural Continuity and Change in Cumberland Sound Cr.Hrs.3

(Formerly 032.339) This course examines the rich and complex history of Cumberland Sound. The course also discusses the specific character of Inuit culture in Cumberland Sound and, in a series of lectures on contemporary community dynamics, looks at recent expressions of culture. Students may not hold credit for both NATV 3390 (032.339) and NATV 3000 (032.300) when titled "Culture and History in Cumberland Sound."

**8.22.5 Native Studies -4000 Level**

**NATV 4200** First Nations' Government Cr.Hrs.3

(Formerly 032.420) A review and critical examination of the evolution of First Nations' self-government with a focus on contemporary issues, models and trends. Prerequisite: written consent of department head.

**NATV 4210** Seminar in Contemporary and Historical Métis Issues Cr.Hrs.3

(Formerly 032.421) A study of the literature, both primary and secondary, dealing with the Métis people in Canada. Prerequisite: written consent of department head.

**NATV 4220** Environment, Economy and Aboriginal Peoples Cr.Hrs.3

(Formerly 032.422) An analysis of sustainable development issues discussed within a cultural context. Depending on the instructor, this course may have a field component. Contact the Department of Native Studies for details. Prerequisite: written consent of department head.

**NATV 4230** Traditional Knowledge and Native Studies Research Cr.Hrs.3

(Formerly 032.423) A study of issues influencing oral histories, case studies, interviews, and other techniques used in research with Aboriginal people. Depending on instructor this course may have a field component. Contact the Department of Native Studies for details. Prerequisite: written consent of department head.

**NATV 4240** Arctic Lifestyles Cr.Hrs.3

(Formerly 032.424) An interdisciplinary study of the interrelationships between culture, economy, and ecology in the Arctic region. Depending on instructor, this course may have a field component. Contact the Department of Native Studies for details. Prerequisite: written consent of department head.

**NATV 4250** Topics on Aboriginal Identities Cr.Hrs.3

(Formerly 032.425) An interdisciplinary study of Aboriginal values, cultures and contemporary identities with emphasis on the impact of colonization. Prerequisite: [a grade of "C+" or better in NATV 1200 (032.120) or "C+" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] and [a grade of "C+" or better in 6 credit hours in Native Studies] or written consent of instructor.

**NATV 4280** Missionaries, Colonialism and Aboriginal Peoples Cr.Hrs.3

(Formerly 032.428) A study of Aboriginal responses to Christian missions with a particular emphasis on resistance, syncretism, and "prophet" movements. Prerequisite: [a grade of "C" or better in 15 credit hours of Native Studies] or written consent of instructor.

**NATV 4290** Independent Research Cr.Hrs.3

(Formerly 032.429) Supervised research or field work. Results will be presented in a form appropriate to the subject of study. Prerequisite: written consent of department head, based on a written research proposal, must be obtained before registration. As the course content will vary from year to year, students may take this course more than once for credit.



**NATV 4300** Advanced Selected Topics in Native Studies Cr.Hrs.3  
(Formerly 032.430) The content of this course will vary from year to year. Contact the Department for a course description. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**NATV 4320** Aboriginal Economic Leadership Cr.Hrs.3  
(Formerly 032.432) An analysis of current leadership strengths and challenges facing Aboriginal organizations. Out of this analysis will come understanding of strategies for working effectively with Aboriginal organizations. Students may not hold credit for both NATV 4320 (032.432) and the former IDM 4090 (098.409). Prerequisite: [a grade of "C" or better in NATV 1200 (032.120)] or [a grade of "C" or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of instructor.

**NATV 4330** Indigenous Aesthetics Cr.Hrs.3  
This course will be centered on Indigenous philosophies and aesthetic theories regarding literature, film, theatre and visual arts produced by Indigenous writers, artists and filmmakers in Canada with special emphasis on conceptualizations of an oral "communitist," activist and resistance aesthetics. Prerequisite: [a grade of "C" or better in 15 credit hours of Native Studies courses which must include NATV 2410 (032.241)] or written consent of instructor or department head.

**NATV 4340** Text, Representation and Discourse Cr.Hrs.3  
This course examines the discourse of representation surrounding Aboriginal Peoples and Canada's historical and cultural productions. Although the focus is on Canadian material and experience, the course draws on international post-colonial approach in the critical study of archival and historical records, literary works and contemporary Aboriginal expressions. Method of study includes historiography, film and literary criticism and post-colonial theory. Prerequisite: [a grade of "C" or better in NATV 2410 (032.241)] or written consent of instructor or department head.

## 8.23 Department of Philosophy

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### 8.23.1 Program Information,

Philosophy is composed of several areas of study: these include logic, metaphysics, ethics, political philosophy, philosophy of science, philosophy of language, and aesthetics. Philosophers use the tools of rigorous logic and clear conceptual analysis. Their goal is to understand things such as the nature of reason, the physical universe, right and wrong, the human mind, and sometimes even the meaning of life. There are good arguments and bad arguments. Training in philosophy will help the student not only consider these important questions but also to improve his or her clarity of expression and ability to think critically.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in six credit hours in Philosophy. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

The General Major may consist entirely of courses numbered beyond the 1000 level.

### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in six credit hours in Philosophy.

The Minor (Concentration) may consist entirely of courses numbered beyond the 1000 level.

### Honours Program

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### 8.23.2 Philosophy,

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR<sup>1</sup> TOTAL: 30 CREDIT HOURS</b>			
6 credit hours in Philosophy courses numbered at the 1000 level	<ul style="list-style-type: none"> <li>• 6 credit hours of History of Philosophy courses</li> <li>• an additional 18 credit hours in Philosophy courses</li> </ul>		
<b>ADVANCED MAJOR<sup>1</sup> TOTAL: 48 CREDIT HOURS</b>			



<p>48 credit hours in Philosophy satisfying the following requirements:</p> <ul style="list-style-type: none"> <li>• at least 6 and at most 12 credit hours must be from PHIL 1200, PHIL 1320, PHIL 1510<sup>5</sup></li> <li>• at least 12 credit hours from History of Philosophy courses</li> <li>• at least 6 credit hours from PHIL 2430 or PHIL 2760</li> <li>• at least 12 credit hours from Philosophy courses numbered at the 3000 level and above. (Students must obtain written permission of the department head to take honours courses)</li> </ul>			
<p><b>MINOR (CONCENTRATION)<sup>1</sup> TOTAL 18 CREDIT HOURS</b></p>			
6 credit hours in Philosophy	12 credit hours in Philosophy courses		
<p><b>HONOURS SINGLE<sup>1, 2, 4</sup></b></p>			
6 credit hours in Philosophy courses numbered at the 1000 level	<ul style="list-style-type: none"> <li>• PHIL 2430<sup>3</sup></li> <li>• PHIL 2760</li> <li>• 6 credit hours from PHIL 2610, PHIL 2630, PHIL 2640, PHIL 2650, PHIL 2660, PHIL 2780, PHIL 2790, PHIL 3580</li> <li>• 12 credit hours outside of Philosophy</li> </ul>	<ul style="list-style-type: none"> <li>• 9 credit hours in Honours Philosophy courses</li> <li>• 3 credit hours from PHIL 2610, PHIL 2630, PHIL 2640, PHIL 2650, PHIL 2660, PHIL 2780, PHIL 2790, PHIL 3580</li> <li>• an additional 3 credit hours from History of Philosophy courses</li> <li>• 3 credit hours in Honours Philosophy courses or History of Philosophy courses</li> <li>• 6 credit hours outside Philosophy</li> </ul>	<ul style="list-style-type: none"> <li>• 12 credit hours in Honours Philosophy courses</li> <li>• 6 credit hours in Philosophy courses numbered at the 2000 level and above</li> <li>• 6 credit hours outside Philosophy</li> </ul>
<p><b>HONOURS DOUBLE<sup>1, 2, 4</sup></b></p>			
6 credit hours in Philosophy courses numbered at the 1000 level	<ul style="list-style-type: none"> <li>• 6 credit hours from History of Philosophy courses</li> <li>• PHIL 2430 or PHIL 2760</li> <li>• 18 credit hours outside Philosophy</li> </ul>	<ul style="list-style-type: none"> <li>• 6 credit hours in Honours Philosophy courses</li> <li>• 3 credit hours from PHIL 2610, PHIL 2630, PHIL 2640, PHIL 2650, PHIL 2660, PHIL 2780, PHIL 2790, PHIL 3580</li> <li>• an additional 3 credit hours from History of Philosophy courses</li> <li>• 12 credit hours outside Philosophy</li> </ul>	<ul style="list-style-type: none"> <li>• 6 credit hours in Honours Philosophy courses</li> <li>• 6 credit hours in Philosophy courses numbered at the 2000 level and above</li> <li>• 12 credit hours outside Philosophy</li> </ul>
<p><b>NOTES:</b></p> <p><sup>1</sup> At most 12 credit hours in Philosophy numbered at the 1000 level may count towards any degree program. In addition, no student may hold credit in both PHIL 1200 and PHIL 1510.</p> <p><sup>2</sup> Courses listed may be taken in years other than the ones specified; however, the total set of courses taken must conform to these requirements in other respects.</p> <p><sup>3</sup> Students who took the former PHIL 1330 in their first year will substitute six other credit hours in Philosophy for PHIL 2430 in Year 2.</p> <p><sup>4</sup> Honours courses: PHIL 3430, PHIL 3440, PHIL 3580, PHIL 3630, PHIL 3640, PHIL 3650, PHIL 3760, PHIL 3770 and all 4000 level courses.</p> <p><sup>5</sup> If PHIL 1510 is taken to satisfy this requirement, it will also satisfy 6 credit hours towards the History of Philosophy requirement.</p>			

**History of Philosophy**

Course	Credit Hours
PHIL 1510* Historical Introduction to Philosophy	6
PHIL 2300 Political Philosophy	6
PHIL 2610 The History and Philosophy of Science	6
PHIL 2630 Continental Rationalism	3
PHIL 2640 British Empiricism	3
PHIL 2650 Plato	3
PHIL 2660 Aristotle	3
PHIL 2710 Twentieth-Century European Philosophy: Existentialism	3
PHIL 2720* Twentieth-Century European Philosophy: Phenomenology	3
PHIL 2780 Thomas Aquinas	3
PHIL 2790 Moral Philosophy	6
PHIL 2820* Existentialism	6
PHIL 3580 Kant	3
PHIL 3690* The Rise of Analytic Philosophy	3

\* indicates course no longer offered

**8.23.3 Philosophy -1000 Level**

**PHIL 1200** Introduction to Philosophy Cr.Hrs.6  
(Formerly 015.120) An introduction to five main areas of philosophy. Topics are logical thinking; the criteria and limits of human knowledge; and three of: God, right and wrong, free will and the nature of consciousness, scientific inquiry, and social justice. Students may not hold credit for PHIL 1200 (015.120) and any of: PHIL 1510 (015.151) or PHIL 1511 (015.151) or the former PHIL 1261 (015.126).

**PHIL 1290** Critical Thinking Cr.Hrs.3  
(Formerly 015.129) A course which helps students to think clearly and critically, and to present, defend, and evaluate arguments. The instructor will discuss good and bad reasoning, everyday fallacies, some specific argument forms such as the categorical syllogism, and ways and means of defining words. Students may not hold credit for PHIL 1290 (015.129) and any of: PHIL 1291 or PHIL 1320 (015.132) or PHIL 1321 (015.132).

**PHIL 1320** Introductory Logic Cr.Hrs.6  
(Formerly 015.132) A course which helps students to think clearly and critically, and to present, defend and evaluate arguments. The course deals with categorical logic, non-formal fallacies, definition, modern symbolic logic and scientific method. Not open to students who have previously obtained credit for PHIL 2430 (015.243) or the former PHIL 3750 (015.375). Students may not hold credit for PHIL 1320 (015.132) and any of: PHIL 1321 (015.132) or PHIL 1290 (015.129) or PHIL 1291 or the former PHIL 1330 (015.133).

**8.23.3 Philosophy -2000 Level**

**PHIL 2150** Mind and Body Cr.Hrs.3  
(Formerly 015.215) An introduction to theories of the mind and body, including dualism, identity theory and functionalism. The course deals with topics such as consciousness, thought, and desire. Prerequisite: [a grade of "C" or better in six credit hours of 1000-level philosophy] or [successful completion of 30 hours of university credit].

**PHIL 2160** Fundamentals of the Philosophy of Language Cr.Hrs.3  
(Formerly 015.216) An introduction to theories of language, including those of Gottlob Frege and Bertrand Russell. The course deals with a variety of linguistic phenomena pertaining to names, definite descriptions, demonstratives, identity sentences, and belief reports. Prerequisite: [a grade of "C" or better in six credit hours of 1000-level philosophy] or [successful completion of 30 hours of university credit].

**PHIL 2170** Special Topics 1 Cr.Hrs.3  
(Formerly 015.217) Topics will vary. Prerequisite: [a grade of "C" or better in three credit hours of philosophy] or [successful completion of 30 hours of university credit]. As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 2180** Special Topics 2 Cr.Hrs.3  
(Formerly 015.218) Topics will vary. Prerequisite: [a grade of "C" or better in three credit hours of philosophy] or [successful completion of 30 hours of university credit]. As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 2290** Ethics and Society Cr.Hrs.6  
(Formerly 015.229) An examination of some contemporary ethical theories and their application to a number of practical issues. Current issues to be discussed may include: ethics and the environment; abortion and euthanasia; sexual freedom and human equality; civil disobedience; individual liberty vs. state authority; punishment; and, justice and utility. Students may not hold credit for PHIL 2290 (015.229) and any of: PHIL 2531 (015.253) or PHIL 2740 (015.274) or PHIL 2741 or PHIL 2750 (015.275) or PHIL 2751. Prerequisite: successful completion of 30 hours of university credit.

**PHIL 2300** Political Philosophy Cr.Hrs.6  
(Formerly 015.230) An analysis and evaluation of the main ideals - justice, freedom, happiness, equality, and self-realization - of the great political philosophers (e.g., Plato, Hobbes, Locke, Mill, and Marx) and of their theories of human nature and their blueprints for society. Students may not hold credit for both PHIL 2300 (015.230) and PHIL 2301



(015.230). Prerequisite: successful completion of 30 hours of university credit.

**PHIL 2430 Modern Logic and the Philosophy of Logic Cr.Hrs.6**

(Formerly 015.243) A systematic introduction to the theory and techniques of modern symbolic logic, with an examination of contributions made by contemporary philosophers in dealing with philosophical problems closely connected with logic. Students may not hold credit for both PHIL 2430 (015.243) and any of: the former PHIL 1330 (015.133) or the former PHIL 3750 (015.375).

**PHIL 2580 Metaphysics Cr.Hrs.3**

(Formerly 015.258) A study of some fundamental problems relating to the nature of reality, e.g., mind and body, cause and effect, human freedom, and the problem of universals. Students may not hold credit for both PHIL 2580 (015.258) and the former PHIL 2450 (015.245). Prerequisite: a grade of "C" or better in six credit hours of Philosophy at the 1000 level.

**PHIL 2610 The History and Philosophy of Science Cr.Hrs.6**

(Formerly 015.261) A critical study of the nature of scientific knowledge and of the evolution of science from the ancient Greeks to the present. A background in science is not required. Prerequisite: successful completion of 30 hours of university credit.

**PHIL 2630 Continental Rationalism Cr.Hrs.3**

(Formerly 015.263) A study of the great Continental philosophers, Descartes, Spinoza, and Leibniz, who viewed reason, rather than experience, as the key to knowledge of the universe. Students may not hold credit for both PHIL 2630 (015.263) and PHIL 2631 (015.263). Prerequisite: [a grade of "C" or better in six credit hours of 1000-level Philosophy] or written consent of department head.

**PHIL 2640 British Empiricism Cr.Hrs.3**

(Formerly 015.264) The course surveys and analyzes the theories of the great British empiricists, Locke, Berkeley, and Hume, on the nature and foundations of human knowledge and its relation to experience. Students may not hold credit for both PHIL 2640 (015.264) and PHIL 2641 (015.264). Prerequisite: [a grade of "C" or better in six credit hours of 1000-level Philosophy] or written consent of department head.

**PHIL 2650 Plato Cr.Hrs.3**

(Formerly 015.265) An examination of Plato's views on reality, "man", politics, and morals through a study of his most significant dialogues. The course will begin with a discussion of the main pre-socratic philosophers. Students may not hold credit for both PHIL 2650 (015.265) and PHIL 2651 (015.265). Prerequisite: [a grade of "C" or better in six credit hours of 1000-level Philosophy] or written consent of department head.

**PHIL 2660 Aristotle Cr.Hrs.3**

(Formerly 015.266) A study of Aristotle's most important views on reality, knowledge, morals, and politics, and of the late classical philosophies: epicureanism and stoicism. Students may not hold credit for both PHIL 2660 (015.266) and PHIL 2661 (015.266). Prerequisite: [a grade of "C" or better in six credit hours of 1000-level Philosophy] or written

consent of department head.

**PHIL 2710 Twentieth-Century European Philosophy: Existentialism Cr.Hrs.3**

(Formerly 015.271) This course will be devoted to a study of existentialist themes as they appear in the writings, both literary and philosophical, of some of the following: Beckett, Camus, de Beauvoir, Hesse, Heidegger, Kafka, Kierkegaard, Marcel, Nietzsche, Sartre, Buber, R.D. Laing, and various existential psychologists. Students may not hold credit for PHIL 2710 (015.271) and any of: PHIL 2820 (015.282) or PHIL 2821 (015.282).

**PHIL 2730 Fundamentals of the Philosophy of Religion Cr.Hrs.3**

(Formerly 015.273) A critical study of some fundamental problems in the philosophy of religion, such as the existence and nature of God, the justification of religious beliefs, the status of mystical and other religious experiences, and the significance of religious discourse. Students may not hold credit for PHIL 2730 (015.273) and any of: PHIL 2701 (015.270) or the former PHIL 2700 (015.270).

**PHIL 2740 Ethics and Biomedicine Cr.Hrs.3**

(Formerly 015.274) An examination of some important ethical issues arising out of recent developments in biology and medicine. Examples of topics to be covered include: the allocation of scarce medical resources; genetic engineering; euthanasia vs. the prolongation of life; abortion and infanticide, and experimentation on human subjects. Students may not hold credit for PHIL 2740 (015.274) and any of: PHIL 2741 or PHIL 2290 (015.229) or PHIL 2531 (015.253). Prerequisite: successful completion of 30 hours of university credit.

**PHIL 2750 Ethics and the Environment Cr.Hrs.3**

(Formerly 015.275) An examination of some important ethical issues connected with environmental pollution and resource depletion. Examples to be covered include: the ideal of liberty and environmental limits; scarcity and the ideal of justice; growth vs. steady-state economics; animal rights, and survival ethics vs. welfare ethics. Students may not hold credit for PHIL 2750 (015.275) and any of: PHIL 2751 or PHIL 2290 (015.229) or PHIL 2531 (015.253). Prerequisite: successful completion of 30 hours of university credit.

**PHIL 2760 Introduction to the Theory of Knowledge Cr.Hrs.6**

(Formerly 015.276) This course challenges and investigates our claims to knowledge. Problems dealt with normally include: the nature of knowledge, sense experience, truth and necessary truth, the analytic-synthetic distinction, memory, induction, etc. Prerequisite: [a grade of "C" or better in six credit hours of Philosophy] or written consent of department head.

**PHIL 2770 Philosophy of Art Cr.Hrs.6**

(Formerly 015.277) An introductory analysis of some contemporary aesthetic theories and an examination of such problems as the relation between art and morality, meaning and expression in art, the nature and functioning of criticism, and the justification of standards of aesthetic evaluation.

**PHIL 2780 Thomas Aquinas Cr.Hrs.3**

(Formerly 015.278) A study of Aquinas' views on topics such



as humans, universals, truth, the existence and nature of God, morality and natural law, and the relation of philosophy to religious faith. Students may not hold credit for PHIL 2780 (015.278) and any of: PHIL 2320 (015.232) or the former PHIL 2321 (015.232).

**PHIL 2790 Moral Philosophy Cr.Hrs.6**

(Formerly 015.279) An introduction to moral philosophy and influential moral philosophers of the past and present. The main emphasis will be on the nature and justification of moral judgement. Philosophers such as Plato, Hobbes, Hume, Kant, Moore, Stevenson, Hare and Rawls will be discussed. Prerequisite: [a grade of "C" or better in six credit hours of 1000-level Philosophy] or written consent of department head.

**PHIL 2800 Contemporary Political Philosophy Cr.Hrs.3**

(Formerly 015.280) An examination of recent theories about whether there should be political authority, who should wield it, what is its proper scope and what are the duties and rights of citizens. The course will deal with representatives of such positions as anarchism, communism, conservatism, liberalism. Students may not hold credit for both PHIL 2800 (015.280) and the former PHIL 3710 (015.371). Prerequisite: successful completion of 30 hours of university credit.

**PHIL 2830 Business Ethics Cr.Hrs.3**

(Formerly 015.283) The course will explore the application of ethical theory to business. Topics to be discussed will normally include: theories of justice, corporate responsibility, the ethics of advertising, consumer and environmental protection, and preferential hiring. Students may not hold credit for both PHIL 2830 (015.283) and PHIL 2831. Prerequisite: successful completion of 30 hours of university credit.

**PHIL 2840 The Ethics of War and Peace Cr.Hrs.3**

(Formerly 015.284) A study of the ethical issues connected with war and the securing of peace, as articulated in the writings of major philosophers and selected political and military thinkers. Relevant moral theories, such as non-violence, holy war, the just war, the ethical reasoning underlying policies of deterrence, will be critically examined in historical and contemporary context. Students may not hold credit for both PHIL 2840 (015.284) and PHIL 2841.

**PHIL 2860 Philosophy of Law Cr.Hrs.3**

(Formerly 015.286) An introduction to the philosophy of law and to rule systems generally. Sample topics include the concept of law (law and religion; natural law; and the "laws of the books"); the connection, if any, between law and morality; and the politics of law in Canada and elsewhere. Students may not hold credit for both PHIL 2860 (015.286) and PHIL 2861.

**PHIL 2870 Philosophy and Law Cr.Hrs.3**

(Formerly 015.287) An inquiry into the philosophy of law, on issues not covered in PHIL 2860 (015.286). Students will examine such topics as: guilt and responsibility; theories of punishment; the right to dissent; legal reasoning; and, "professional ethics." Students may not hold credit for both PHIL 2870 (015.287) and PHIL 2871.

**8.23.3 Philosophy -3000 Level**

**PHIL 3220 Feminist Philosophy Cr.Hrs.3**

(Formerly 015.322) An examination of philosophical issues of special interest to students of feminism and women's issues. Topics typically include: feminist epistemology, metaphysical implications of feminism, and feminist ethics. Prerequisite: [a grade of "C" or better in six credit hours in Philosophy] or written consent of department head.

**PHIL 3430 Problems in Legal Philosophy Cr.Hrs.3**

(Formerly 015.343) A treatment of some problems arising in the philosophy of law including responsibility and the doctrine of mens rea, theories of punishment, law and morality, and the concept of law. Prerequisite: written consent of department head.

**PHIL 3440 Problems in Social and Political Philosophy Cr.Hrs.3**

(Formerly 015.344) A treatment of selected problems arising in social and political philosophy, e.g., the philosophy of the state, distributive justice, and the ethics of revolution. Prerequisite: written consent of department head.

**PHIL 3580 Kant Cr.Hrs.3**

(Formerly 015.358) A study of the 18th-century German thinker, Immanuel Kant, focusing on the revolutionary theories about reality and human knowledge contained in his major metaphysical work, *The Critique of Pure Reason*. Prerequisite: [a grade of "C" or better in one of: PHIL 2630 (015.263) or PHIL 2631 (015.263) or PHIL 2640 (015.264) or PHIL 2641 (015.264)] or written consent of department head. PHIL 3580 (015.358) counts as a Group 2 and Group 4 course.

**PHIL 3630 Contemporary Epistemology 1 Cr.Hrs.3**

(Formerly 015.363) A critical examination of contemporary issues in the theory of knowledge including recent empiricist attempts to resolve the problem of justifying belief. Typical topics include foundations of knowledge, the concept of "truth", radical scepticism, the new riddle of induction, normative epistemology, the psychology and sociology of knowledge. Prerequisite: [a grade of "C" or better in PHIL 2760 (015.276)] or written consent of department head.

**PHIL 3640 Contemporary Epistemology 2 Cr.Hrs.3**

(Formerly 015.364) A critical examination of some contemporary issues in the theory of knowledge not covered in PHIL 3630 (015.363). There is evidence that empiricism is a mistaken theory of knowledge. The aim is to bring the student up-to-date on the details of this current conflict and to proceed further on our own, if possible. Readings are from the current literature. A natural sequel to PHIL 3630 (015.363), but can be taken independently. Prerequisite: written consent of department head.

**PHIL 3650 Contemporary Metaphysics 1 Cr.Hrs.3**

(Formerly 015.365) A survey of recent issues of ontology, reference and existence, ontological commitment, realism vs. nominalism, Quine's notion of ontological relativity, etc. Prerequisite: written consent of department head.

**PHIL 3660 Contemporary Metaphysics 2 Cr.Hrs.3**

(Formerly 015.366) An intensive investigation of the most significant recent scholarly research into metaphysics.



Problem areas to be studied will vary from year to year.  
Prerequisite: written consent of department head.

**PHIL 3760** Topics in Moral Theory 1 Cr.Hrs.3  
(Formerly 015.376) A critical examination of such issues in moral theory as moral scepticism, contractarianism, moral realism, utilitarianism and justice. Prerequisite: [a grade of "C" or better in PHIL 2790 (015.279)] or written consent of department head.

**PHIL 3770** Topics in Moral Theory 2 Cr.Hrs.3  
(Formerly 015.377) A critical examination of such issues in moral theory as moral realism, naturalism, moral epistemology, feminist ethics, moral language, egoism and justice. Prerequisite: [a grade of "C" or better in PHIL 2790 (015.279)] or written consent of department head.

### 8.23.3 Philosophy -4000 Level

**PHIL 4460** Contemporary Issues 1 Cr.Hrs.3  
(Formerly 015.446) An intensive study of specially selected topics in contemporary philosophy. The subject matter of the course will vary from year to year. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 4470** Contemporary Issues 2 Cr.Hrs.3  
(Formerly 015.447) A course of the same description as PHIL 4460 (015.446), but with subject matter drawn from a different area of contemporary philosophy. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 4490** Philosophy of Mind Cr.Hrs.3  
(Formerly 015.449) A seminar concentrating on the analysis of consciousness. Topics include: mind and brain, the explanation of human behaviour, and whether or not machines and animals can think. Prerequisite: written consent of department head.

**PHIL 4510** Philosophy of Language Cr.Hrs.3  
(Formerly 015.451) An examination of problems such as the nature of meaning, grammar, semantics, reference, truth, and methodology in the study of language. Prerequisite: written consent of department head.

**PHIL 4520** Historical Topics 1 Cr.Hrs.3  
(Formerly 015.452) Selected topics in the history of philosophy. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 4580** Honours Seminar Cr.Hrs.6  
(Formerly 015.458) A seminar course with subject matter varying from year to year, designed to meet special needs of Honours Philosophy students. Prerequisite: written consent of department head.

**PHIL 4600** Science and Philosophy since Newton Cr.Hrs.3  
(Formerly 015.460) This course traces the major threads of humankind's intellectual evolution from the time of Newton to the present. Figures studied include Newton, Kant, Maxwell,

Darwin, Peirce, and Einstein. Issues include the nature of space and time, of matter and energy, of living organisms, and the nature and evolution of human consciousness. Prerequisite: fourth year standing in any faculty or written consent of department head.

**PHIL 4610** Directed Reading in Philosophy  
1 Cr.Hrs.3  
(Formerly 015.461) Subject matter will vary from year to year. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 4620** Directed Reading in Philosophy  
2 Cr.Hrs.3  
(Formerly 015.462) Subject matter will vary from year to year. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 4630** Symbolic Logic 1 Cr.Hrs.3  
(Formerly 015.463) Selected topics in mathematical logic, including propositional and quantificational logic, number theory, and the major metatheoretical results. Prerequisite: written consent of department head.

**PHIL 4640** Symbolic Logic 2 Cr.Hrs.3  
(Formerly 015.464) Selected topics in mathematical logic, including propositional and quantificational logic, number theory, and the major metatheoretical results. Prerequisite: written consent of department head.

## 8.24 Department of Political Studies

**Head:** Steven Lecce

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### 8.24.1 Program Information,

Political Studies examines the dynamics of human interaction in which individuals and groups compete to achieve their goals. The study of politics involves a consideration of the interactions between the individual, the state, government, public affairs and public policy. Political Studies examines the dynamics of these interactions in the context of competing visions, values and interests, particularly in the pursuit of varying public goals, including the quest for political power and the control of government. Politics is thus both a study of conflict between competing interests and a study of how these competing interests achieve compromise and cooperation.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program



For entry to the Major, the prerequisite is a grade of "C" or better in six credit hours in Political Studies. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

A maximum of six credit hours in Political Studies courses numbered at the 1000 level may be used towards the 30 credit hours for a General Major or the 48 credit hours for an Advanced Major.

**Minor (Concentration) Program**

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in six credit hours in Political Studies.

A maximum of six credit hours in Political Studies courses numbered at the 1000 level may be used toward the 18 credit hours for a Minor.

**Honours Program**

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

Honours Ancillary Options:

- |            |            |
|------------|------------|
| Economics  | Psychology |
| Geography  | Sociology  |
| History    | Statistics |
| Philosophy |            |

A modern language or another subject with department approval.

Honours in Political Studies may be taken in combination with the program of Central and East European Studies. See Section 8.5.

**Other**

Combinations of courses for the Major, Minor and Honours programs, other than those listed above may be permitted by written consent of the department head. Similarly, Honours courses may be taken by students in the General or Advanced Major programs with the written consent of the department head.

Honours courses are open to Honours students and other advanced undergraduate students with written consent of instructor or department head.

**8.24.2 Political Studies**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
6 credit hours in Political Studies courses numbered at or above the 1000 level	<ul style="list-style-type: none"> <li>• 18 credit hours in Political Studies courses numbered at or above the 2000 level</li> <li>• 6 credit hours in Political Studies courses numbered at or above the 3000 level</li> </ul>		
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
6 credit hours in Political Studies courses numbered at or above the 1000 level	<ul style="list-style-type: none"> <li>• 6 credit hours in Political Studies courses numbered at the 2000 level</li> <li>• 6 credit hours in Political Studies courses numbered at the 3000 level</li> <li>• 6 credit hours in Political Studies courses numbered at the 4000 level</li> <li>• an additional 24 credit hours in Political Studies courses numbered at or above the 2000 level</li> </ul>		
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
6 credit hours in Political Studies courses numbered at or above the 1000 level	12 credit hours in Political Studies courses numbered at or above the 2000 level		
<b>HONOURS SINGLE<sup>1, 3, 4</sup></b>			
6 credit hours in Political Studies courses numbered at or above the 1000 level	<ul style="list-style-type: none"> <li>• 18 credit hours from POLS 2000, POLS 2040, POLS 2070, POLS 2510</li> <li>• 12 credit hours in ancillary options</li> </ul>	POLS 3950  <ul style="list-style-type: none"> <li>• 15 credit hours in Political Studies courses numbered at the 3000 level<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>• 18 credit hours in Political Studies Honours courses numbered at the 4000 level</li> <li>• 6 credit hours in ancillary options</li> </ul>



		• 6 credit hours in ancillary options	
<b>HONOURS DOUBLE</b> <sup>1, 3, 4</sup>			
6 credit hours in Political Studies courses numbered at or above the 1000 level	<ul style="list-style-type: none"> <li>• 12 credit hours from POLS 2000, POLS 2040, POLS 2070, POLS 2510</li> <li>• 12 credit hours in other Honours field</li> <li>• 6 credit hours in ancillary options</li> </ul>	<ul style="list-style-type: none"> <li>• 12 credit hours in Political Studies courses numbered at the 3000 level<sup>2</sup></li> <li>• an additional 12 or 18 credit hours depending on other Honours field</li> </ul>	<ul style="list-style-type: none"> <li>• 12 credit hours in Political Studies Honours courses numbered at the 4000 level</li> <li>• 12 credit hours in other Honours field</li> </ul>
<p><b>NOTES:</b></p> <p><sup>1</sup> A student must include at least six credit hours in political theory (POLS 2510, POLS 3240, POLS 3510, POLS 3600, POLS 3710, POLS 3810, POLS 4510, POLS 4610, POLS 4710).</p> <p><sup>2</sup> A student in Single or Double Honours may, with written permission of the department head, substitute: six credit hours in Honours courses numbered at the 4000-level in place of six credit hours numbered at the 3000-level.</p> <p><sup>3</sup> Ancillary options are courses taken from outside the Honours field of study.</p> <p><sup>4</sup> Honours courses: all 4000 level courses</p>			

### 8.24.3 Political Studies -1000 Level

#### **POLS 1000** Democracy and Development Cr.Hrs.3

An examination of development and democracy as desiderata of good societies and an examination of historical conditions in which individual and collective freedom on the one hand, and economic prosperity on the other, have been achieved in the various countries of the world.

#### **POLS 1010** Political Ideas and Ideologies Cr.Hrs.3

Lab required. An introduction to different philosophical systems of political beliefs and values that structure contemporary political discourse and practise.

#### **POLS 1040** Global Political Issues Cr.Hrs.3

Lab required. An investigation of the most pressing global issues facing the world today, including debates over globalization, the rise of trans-sovereign problems, and current theories about the future of the state.

#### **POLS 1070** Law, Politics, and Power in Canada Cr.Hrs.3

Lab required. An introduction to the basic structures and processes of politics, law and power in Canada with the aim of explaining and assessing contemporary issues and events.

#### **POLS 1500** Introduction to Politics Cr.Hrs.6

(Formerly 019.150) A survey and appraisal of contemporary ideology, government, and international problems. Students may not hold credit for both POLS 1500 (019.150) and POLS 1501 (019.150).

### 8.24.3 Political Studies -2000 Level

#### **POLS 2000** Introduction to Comparative Politics Cr.Hrs.6

(Formerly 019.200) An introduction to the methodology and scope of comparative politics, examining political processes and public policies in a variety of political systems, including

liberal democracies, post-Communist, newly industrializing, and developing nations.

#### **POLS 2040** Introduction to International Relations Cr.Hrs.6

(Formerly 019.204) An introduction to the analysis of international political action and interaction. The course examines the manner in which the foreign policies of states are formulated and the conflict, competition and cooperation produced by state interaction. Examples are drawn mainly from international events since 1945, with appropriate references to earlier periods. Students may not hold credit for both POLS 2040 (019.204) and POLS 2041 (019.204).

#### **POLS 2044** Introduction to Conflict Resolution Studies Cr.Hrs.6

Inter-University Services course.

#### **POLS 2070** Introduction to Canadian Government Cr.Hrs.6

(Formerly 019.207) A survey of the Canadian political institutions and processes including contemporary Canadian federalism, the parliamentary system, political parties and interest groups. Students may not hold credit for both POLS 2070 (019.207) and POLS 2071 (019.207).

#### **POLS 2510** Great Political Thinkers Cr.Hrs.6

(Formerly 019.251) A survey and evaluation of major political theorists from ancient to modern times. Students may not hold credit for both POLS 2510 (019.251) and POLS 2511 (019.251).

### 8.24.3 Political Studies -3000 Level

#### **POLS 3100** Gender and Politics in Canada Cr.Hrs.3

(Formerly 019.310) This course introduces the principal themes in the study of gender and politics in Canada. Topics may include women's political organizing and activism,



representation in political institutions, the gendered division of labour in the private and public spheres, gender and public policy, and the gendered nature of political behaviour. Prerequisite: [a grade of "C" or better in POLS 2070 (019.207) or POLS 2071 (019.207)] or written consent of instructor or department head.

**POLS 3140 Selected Topics in Politics 1 Cr.Hrs.3** (Formerly 019.314) The content of this course will vary. Contact the department for a course description. Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 3150 Selected Topics in Politics 2 Cr.Hrs.3** (Formerly 019.315) The content of this course will vary. Contact department for a course description. Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 3160 Human Rights and Civil Liberties Cr.Hrs.3** (Formerly 019.316) An examination of the foundations of modern human rights systems in liberal democracies. Topics addressed include the main philosophical arguments on human rights, dominant legal theories of rights, and international conventions and systems of human rights protection. Prerequisite: [a grade of "C" or better in one of: POLS 2510 (019.251) or POLS 2511 (019.251)] or written consent of instructor or department head.

**POLS 3170 The Canadian Charter of Rights and Freedoms Cr.Hrs.3** (Formerly 019.317) A systematic examination of the rights and freedoms contained in the Charter through Supreme Court decisions. Additional topics addressed include the historical, political and intellectual sources of rights protection in Canada and a review of Canadian human rights legislation. Prerequisite: [a grade of "C" or better in one of: POLS 2070 (019.207) or POLS 2071 (019.207)] or written consent of instructor or department head.

**POLS 3200 International Security and Conflict Management Cr.Hrs.6** (Formerly 019.320) A study of contemporary world conflict, conflict management, and issues of global security. Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3220 Globalization and the World Economy Cr.Hrs.3** (Formerly 019.322) An exploration of issues relating to globalization, including regionalism, economic structures and regimes, multinational corporations, global debt, problems in the developing world, and the future for leadership in the international system. Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3240 Feminist Political Theory Cr.Hrs.3** (Formerly 019.324) An examination of feminist approaches to the status and participation of women in political life. The course also includes feminist discourse on ethical issues and

state policy.

**POLS 3250 International Political Economy Cr.Hrs.3** (Formerly 019.325) A survey of the relationship between political authority and the production and distribution of global wealth. Emphasis is placed on the historical development of international political economy, its fundamentals, as well as major theoretical perspectives. Students may not hold credit for both POLS 3250 (019.325) and POLS 3251 (019.325). Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3330 Politics of the European Union Cr.Hrs.3** A study of the creation and evolution of the "European movement" which began after World War II as well as the various stages of European integration to the present day. Topics include institutional development; economic, monetary, and political union; and the global relations of the modern EU. Students may not hold credit for both POLS 3330 and the former POLS 2430 (019.243). Prerequisite: [a grade of "C" or better in one of: POLS 2000 (019.200) or POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3340 Middle East Politics Cr.Hrs.3** An examination of the Middle East as a region of global strategic significance, with an emphasis on the major issues related to war and peace in selected Middle Eastern conflicts. Students may not hold credit for both POLS 3340 and POLS 3140 (019.314) when offered with the topic "Arab Israeli Conflict."

**POLS 3470 Canadian Public Management Cr.Hrs.3** An introduction to the internal and external factors affecting contemporary public sector management in Canada. The course will examine the primary values, policies, processes, and structures within the civil service. Prerequisite: [a grade of "C" or better in one of: POLS 2070 (019.207) or POLS 2071 (019.207) or POLS 2571 (019.257) or the former POLS 2570 (019.257)] or written consent of instructor or department head.

**POLS 3510 Political Doctrines of the Twentieth Century Cr.Hrs.6** (Formerly 019.351) A survey of major contemporary systems of ideas which seek to explain or justify political behaviour.

**POLS 3520 Canadian Foreign and Defence Policy Cr.Hrs.6** (Formerly 019.352) An examination of Canadian foreign and defence policy, with attention to contemporary events and issues. The course is designed to examine both foreign and defence policies as interdependent issues for Canadian interests. The course will assess the evolution and changing priorities of Canadian foreign and defence issues, with particular attention to Canada's relations with the United States, Europe, Asia and the Third World. Students may not hold credit for both POLS 3520 (019.352) and POLS 3561 (019.356). Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3570 Administrative Theory in the Public Sector Cr.Hrs.3** A study of the fundamental principles with which to



understand human behaviour inside public organizations. The course addresses a diverse but comprehensive set of historical and current theories, concepts and approaches in the field of public administration. Prerequisite: [a grade of "C" or better in one of: POLS 2000 (019.200) or POLS 2070 (019.207) or POLS 2571 (019.257) or POLS 3470 or the former POLS 2570 (019.257)] or written consent of instructor or department head.

**POLS 3600 Political Concepts Cr.Hrs.3**  
(Formerly 019.360) An exposition and analysis of the role and meaning of terms central to political discourse. Among concepts to be studied are power, community, justice, freedom, equality and obligation. Prerequisite: [a grade of "C" or better in POLS 2510 (019.251) or POLS 2511 (019.251)] or written consent of instructor or department head.

**POLS 3640 Comparative Defence Policy Cr.Hrs.3**  
(Formerly 019.364) The examination within a comparative framework of the factors determining the making and implementation of the defence policies of a number of representative and significant countries. Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3670 Canadian Political Parties Cr.Hrs.3**  
(Formerly 019.367) This course provides students with an understanding of the origins, evolution, operation and programmes of Canadian political parties. Topics addressed include party types, party systems, party organization and financing, electoral activities and party leadership. Prerequisite: [a grade of "C" or better in one of: POLS 2070 (019.207) or POLS 2071 (019.207)] or written consent of instructor or department head.

**POLS 3710 Distributive Justice Cr.Hrs.3**  
A study of the question of whether, and to what extent, inequalities of various kinds are compatible with the demands of both justice and community. This course examines contending answers to the question by investigating classical and/or contemporary theories of distributive justice. Prerequisite: a grade of "C" or better in POLS 2510 (019.251) or POLS 2511 (019.251).

**POLS 3720 Politics, Government and Society in Ukraine Cr.Hrs.3**  
An analysis of political transition and development in Ukraine. Ukraine's international relations will also be examined. Students may not hold credit for both POLS 3720 and POLS 3140 (019.314) when offered with the topic "Government Politics in Ukraine" or the former POLS 2920 (019.292). Prerequisite: [a grade of "C" or better in one of: POLS 2000 (019.200) or POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3810 Introduction to Marxism Cr.Hrs.3**  
An overview of the thought of Karl Marx and Fredrick Engels, focusing on its philosophical origins, key concepts and ideas of their historical materialism, critique of political economy, political theory and philosophy. The development of Marxism after Marx and Engels, particularly in the tradition of Western Marxism, will be traced in the case of each concept and idea. Students may not hold credit for both POLS 3810 and

the former POLS 4810 (019.481).

**POLS 3840 Approaches to the Study of International Relations Cr.Hrs.3**  
(Formerly 019.384) An overview of the various competing theoretical approaches used in the analysis of international relations, as well as the methodologies used by international politics analysts. Students may not hold credit for both POLS 3840 (019.384) and POLS 3841. Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3860 Canadian Federalism Cr.Hrs.3**  
(Formerly 019.386) An examination of Canadian federal structures and processes with emphasis on constitutional influences, the evolution of jurisdictions, province-building and contemporary federal issues.

**POLS 3880 Comparative Foreign Policy Cr.Hrs.3**  
(Formerly 019.388) A comparative study of the factors affecting foreign policy in selected countries including, but not limited to, Canada, the United States, Russia, China, Japan, Great Britain, France, and Germany. The course also includes an examination of international, regional, and domestic factors affecting the creation of foreign policy by states. Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3920 American Politics Cr.Hrs.6**  
(Formerly 019.392) An examination of institutions, processes, public policies, and current public affairs in the United States. Prerequisite: [a grade of "C" or better in POLS 2000 (019.200)] or written consent of instructor or department head.

**POLS 3930 Foreign Policy Decision-Making Cr.Hrs.6**  
(Formerly 019.393) The analysis and construction of selected theoretical models of the foreign policy decision-making process. The case studies examined will refer primarily, but not exclusively, to U.S. foreign policy decision-making. Students may not hold credit for both POLS 3930 (019.393) and the former POLS 3931 (019.393).

**POLS 3950 Research Methods in the Study of Politics Cr.Hrs.3**  
(Formerly 019.395) An introduction to the major quantitative and qualitative research strategies employed in the study of politics. The topics addressed include interviewing, content analysis, comparative studies, survey design, sampling, research ethics and basic statistical analysis. Prerequisite: [a grade of "C" or better in six credit hours of Political Studies at the 2000 level] or written consent of instructor or department head.

**POLS 3960 Canadian Politics Cr.Hrs.6**  
(Formerly 019.396) An examination of recurrent issues and problems in the Canadian political culture including the evolution of parties and ideologies, and issues such as regionalism, dualism, continentalism, civil liberties and the interventionist state. Prerequisite: [a grade of "C" or better in POLS 2070 (019.207) or POLS 2071 (019.207)] or written consent of instructor or department head.



### 8.24.3 Political Studies -4000 Level

#### **POLS 4140** Canadian Political Ideas Cr.Hrs.3

An examination of the ideas that underlie Canadian politics. What are the values at the centre of political movements in Canada and where do they come from? How have these values changed over time and why? We will attempt to answer these questions by exploring the development of Canadian political ideas as well as our current ideological context in Canada. Effort will be made to reflect on ideological debate on contemporary issues of the day. Prerequisite: written consent of instructor or department head.

#### **POLS 4150** Indigenous Governance Cr.Hrs.3

An examination of Indigenous governance before and since the 'European invasion' which introduces key themes, debates and controversies pertaining to Indigenous governance and its study. Students may not hold credit for both POLS 4150 and POLS 4160 (019.416) when offered with the topic "Indigenous Governance." Prerequisite: written consent of instructor or department head.

#### **POLS 4160** Selected Topics in Politics 3 Cr.Hrs.3

(Formerly 019.416) The content of this course will vary. Contact department for a course description. Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.

#### **POLS 4170** Selected Topics in Politics 4 Cr.Hrs.3

(Formerly 019.417) The content of this course will vary. Contact department for a course description. Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.

#### **POLS 4180** Provincial Politics in Canada Cr.Hrs.3

(Formerly 019.418) The course focuses on politics at the provincial level in Canada and on the politics of the regions: Atlantic, Quebec, Ontario, the West and BC. Emphasis is on a comparison of political cultures, governments, budgets, parties, elections, and political change across the regions. Prerequisite: written consent of instructor or department head.

#### **POLS 4190** Manitoba Politics and Government Cr.Hrs.3

(Formerly 019.419) An examination of politics and government in modern Manitoba. Topics addressed include federal-provincial relations, parties and elections, political culture, the legislative process and public policy. Prerequisite: written consent of instructor or department head.

#### **POLS 4370** Comparative Public Administration Cr.Hrs.3

A study of the systems, processes, and values of public administration in an international comparative context. Topics include public sector organization and reform, international standards of policy and practice, and the role of international institutions in promoting public sector modernization. The course covers countries from several geographic zones and places domestic issues in the larger, global political economy. Prerequisite: written consent of

instructor or department head.

#### **POLS 4470** Managing Modern Government Cr.Hrs.3

A study of the skills required to effectively manage in the public sector. Topics covered include: managerial effectiveness, written and interpersonal communication, gaining power and influence, working with political staff and politicians, conflict management, risk management, performance management, creating and working through teams, decision-making, motivation, and empowerment. Students may not hold credit for both POLS 4470 and the former POLS 4570 (019.457). Prerequisite: written consent of instructor or department head.

#### **POLS 4510** Advanced History of Political Ideas Cr.Hrs.3

(Formerly 019.451) An in-depth analysis of selected texts in the history of political theory with a focus on ideas and concerns relevant to contemporary political life. Prerequisite: written consent of instructor or department head.

#### **POLS 4530** Regionalism in International Relations Cr.Hrs.3

(Formerly 019.453) This course examines the nature and substance of political relations among states in the international system to institutionalize relations for economic, political, or security reasons. Emphasis is given to post-1945 and contemporary regional relationships. Regional arrangements studied in the course include, but are not necessarily limited to, North America, Europe, the Asia-Pacific rim, the Middle East, Latin America, and Africa. Students may not hold credit for both POLS 4530 (019.453) and POLS 4830 (019.483). Prerequisite: written consent of instructor or department head.

#### **POLS 4610** Contemporary Political Theory Cr.Hrs.3

(Formerly 019.461) An examination of recent developments in the analysis of political ideas, institutions, and behaviour. Prerequisite: written consent of instructor or department head.

#### **POLS 4660** The State in the Economy Cr.Hrs.6

(Formerly 019.466) Drawing from literature in Canadian political economy, this course will examine historical and contemporary patterns and forms of Canadian state involvement in the economy. Both federal and provincial contexts will be studied and selected areas of current interest, such as the role of crown corporations and industrial policy, will be emphasized. Prerequisite: written consent of instructor or department head.

#### **POLS 4710** Political Theory and the Family Cr.Hrs.3

An examination of the normative aspects of the relations between children, families and the state. Prerequisite: written consent of instructor or department head.

#### **POLS 4730** Strategic Studies Cr.Hrs.6

(Formerly 019.473) An examination of the role, management, and politics of organized force in the international system. Prerequisite: written consent of instructor or department head.

#### **POLS 4860** The Canadian Policy Process Cr.Hrs.6

(Formerly 019.486) This course will examine a number of conceptual frameworks for the analysis of the policy process, will analyze the role of different institutions and actors in the



policy process, and will appraise current government responses to problems within Canadian society. Prerequisite: written consent of instructor or department head.

**POLS 4940 American Foreign Policy Cr.Hrs.6**  
(Formerly 019.494) An analysis of the foreign policy of the United States from 1945 to the present, focusing on the explanation of the foreign policy decisions taken and the policy-making process giving rise to them. Prerequisite: written consent of instructor or department head.

## 8.25 Department of Psychology

**Head:** Todd Mondor

**Campus Address/General Office:** P404 Duff Roblin Building

**Telephone:** 204 474 9338

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### 8.25.1 Program Information,

Psychology is a discipline that examines questions concerning behaviour and mental processes. Cognitive processes such as perceiving, learning, re-membering, thinking, talking, and social interactions as well as the biological basis for behaviour and human development are among the issues explored. Psychology on the one hand helps us understand human and animal behaviour, but on the other also provides insights that can help and benefit individuals and society. A degree program is also offered in the Faculty of Science.

### 8.25.2 Psychology,

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
PSYC 1200 or PSYC 1211 and PSYC 1221	<ul style="list-style-type: none"> <li>• PSYC 2250 and PSYC 2260</li> <li>• 6 additional credit hours in Psychology courses numbered at the 2000 or 3000 level</li> </ul>	12 credit hours in Psychology courses numbered at the 2000 or 3000 level	
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
PSYC 1200 or PSYC 1211 and PSYC 1221	<ul style="list-style-type: none"> <li>• PSYC 2250 and PSYC 2260</li> <li>• 6 additional credit hours in Psychology courses numbered at the 2000 or 3000 level</li> </ul>	12 credit hours in Psychology courses numbered at the 2000 or 3000 level	18 credit hours in Psychology courses numbered at the 2000 or 3000 level
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
PSYC 1200 or PSYC 1211 and PSYC 1221	6 credit hours in Psychology courses numbered at the 2000 or 3000 level	6 credit hours in Psychology courses numbered at the 2000 or 3000 level	
<b>HONOURS SINGLE<sup>4</sup></b>			

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in PSYC 1200 or a grade of "C" or better in both PSYC 1211 and PSYC 1221. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in PSYC 1200 or a grade of "C" or better in both PSYC 1211 and PSYC 1221, or written consent of the department head.

### Honours Program

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)



PSYC 1200 or PSYC 1211 and PSYC 1221	<ul style="list-style-type: none"> <li>• PSYC 2250 and PSYC 2260</li> <li>• 6 credit hours in Psychology courses numbered at the 2000 or 3000 level: (3 hours from each of two different lettered menu categories)<sup>1</sup></li> <li>• 15 credit hours in ancillary options<sup>2</sup></li> <li>• 3 credit hours in free options<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>• 3 credit hours from PSYC 3340 or PSYC 3630</li> <li>• PSYC 3200</li> <li>• 12 credit hours in Psychology courses numbered at the 2000 or 3000 level (3 hours each of at least two different lettered menu courses not taken in Year 2)</li> <li>• 3 credit hours in Psychology courses numbered at the 4000 level or one of: PSYC 3520, PSYC 3560 or PSYC 3590</li> <li>• 9 credit hours in ancillary options<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>• PSYC 4520</li> <li>• 6 credit hours in Psychology courses numbered at the 4000 level</li> <li>• 9 credit hours in Psychology courses numbered at the 2000 or 3000 level, including any remaining menu category</li> <li>• 3 credit hours in free options<sup>3</sup></li> <li>• 6 credit hours in ancillary options<sup>2</sup></li> </ul>
<b>HONOURS DOUBLE<sup>4</sup></b>			
PSYC 1200 or PSYC 1211 and PSYC 1221	<ul style="list-style-type: none"> <li>• PSYC 2250 and PSYC 2260</li> <li>• 6 credit hours in Psychology courses numbered at the 2000 or 3000 level: (3 hours from each of two different lettered menu categories)<sup>1</sup></li> <li>• 12 credit hours in other Honours field</li> <li>• 6 credit hours in an ancillary option<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>• 3 credit hours from PSYC 3340 or PSYC 3630</li> <li>• PSYC 3200</li> <li>• 6 credit hours in Psychology courses: (3 hours from each of two different lettered menu categories not already taken in Year 2)</li> <li>• 12 credit hours in other Honours field</li> </ul>	<ul style="list-style-type: none"> <li>• PSYC 4520</li> <li>• 6 credit hours in Psychology courses numbered at the 4000 level</li> <li>• 12 credit hours in other Honours field</li> </ul>
<p><b>NOTES:</b></p> <p><sup>1</sup> Lettered menu categories are as follows:                  Category A: Personality/Social PSYC 2410, PSYC 2420, PSYC 3450, PSYC 3460                  Category B: Developmental PSYC 2290, PSYC 2310, PSYC 2370                  Category C: Learning PSYC 2440, PSYC 2470                  Category D: Cognitive PSYC 2480, PSYC 3160, PSYC 3170, PSYC 3441, PSYC 3580, PSYC 3610                  Category E: Biological PSYC 2360, PSYC 3350, PSYC 3430</p> <p><sup>2</sup> Ancillary options are to be chosen from courses that are acceptable for credit in the Faculty of Arts (excluding Psychology courses).</p> <p><sup>3</sup> Free options are to be chosen from courses that are acceptable for credit in the Faculty of Arts (including Psychology courses).</p> <p><sup>4</sup> Honours courses: PSYC 3340 and all 4000 level courses.</p>			

### 8.25.3 Psychology -1000 Level

**PSYC 1200** Introduction to Psychology Cr.Hrs.6  
(Formerly 017.120) Basic concepts and principles of individual behaviour are examined, particularly those of human development, normal and abnormal behaviour, social psychology, learning, perception, and psychological measurement. Students may not hold credit for PSYC 1200 (017.120) and any of: PSYC 1211 (017.121) or PSYC 1221 (017.122) or the former PSYC 1201 (017.120). Prerequisite for all other courses in Psychology.

### 8.25.3 Psychology -2000 Level

**PSYC 2250** Introduction to Psychological Research Cr.Hrs.3  
(Formerly 017.225) Examines psychology as a scientific discipline and describes methods of collecting and interpreting psychological data. Required of all Majors and normally taken in the second year. Students may not hold credit for both PSYC 2250 (017.225) and PSYC 2251 (017.225). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2260** Introduction to Research Methods in Psychology Cr.Hrs.3

(Formerly 017.226) Discusses concepts of inductive inference and explanation. The nature of research designs is emphasized. Required of all Majors and normally taken in the second year. Students may not hold credit for both PSYC 2260 (017.226) and PSYC 2261 (017.226). Prerequisite: a grade of "C" or better in PSYC 2250 (017.225) or PSYC 2251 (017.225).

**PSYC 2290** Child Development Cr.Hrs.3

(Formerly 017.229) The course deals with normal psychological development from prenatal life until puberty. The scientific approach to child study is emphasized. Students may not hold credit for both PSYC 2290 (017.229) and PSYC 2291 (017.229). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2310** Adolescent Development Cr.Hrs.3

(Formerly 017.231) This course deals with normal psychological development from puberty until adulthood. Results of scientific research are emphasized. Students may not hold credit for both PSYC 2310 (017.231) and PSYC 2311 (017.231). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2360** Brain and Behaviour Cr.Hrs.3

(Formerly 017.236) This course explores the relationship between brain and behaviour. The student will first learn about the fundamental elements of the nervous system. Lectures will integrate these elements into discussions of systems responsible for sensation, motor control, emotion, sleep, learning and memory. Clinical scenarios will be used to illuminate function. Students may not hold credit for PSYC 2360 (017.236) and any of: PSYC 3530 (017.353) or PSYC 3531 (017.353) or PSYC 3540 (017.354) when titled Brain and Behaviour or the former PSYC 3541 (017.354). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2370** Developmental Psychology from Adolescence to Old Age Cr.Hrs.3

(Formerly 017.237) The course deals with psychological changes during young adulthood, middle age, and old age. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2390** Psychology of Women Cr.Hrs.3

(Formerly 017.239) A critical re-examination of existing assumptions about women in the light of contemporary research. Psychology as a discipline and a methodology for investigating human behaviour will be stressed. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or

written consent of department head.

**PSYC 2400** The Psychology of Sex Differences Cr.Hrs.3

(Formerly 017.240) Course explores the relationship between: human behaviour, physiology, and sex roles for males and females in our society. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2410** Social Psychology 1 Cr.Hrs.3

(Formerly 017.241) This course provides a basic introduction to the ways in which we affect and are affected by the behaviour of others. Topics typically include: methods used by social psychologists, attitudes and attitude change, social beliefs and judgements, conformity, and persuasion. Students may not hold credit for both PSYC 2410 (017.241) and PSYC 2411 (017.241). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2420** Social Psychology 2 Cr.Hrs.3

(Formerly 017.242) This course provides an introduction to basic social psychology topics not covered in PSYC 2410 (017.241) or PSYC 2411 (017.241), such as social norms and roles, group dynamics, prejudice, aggression, altruism, attraction and close relationships, and intergroup conflict. Students may not hold credit for both PSYC 2420 (017.242) and PSYC 2421. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2430** Humanistic and Transpersonal Psychology Cr.Hrs.3

(Formerly 017.243) A survey of such topics as search for meaning, personal growth, self-actualization, electric stimulation of the brain, meditation, and extra-sensory perception. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2440** Behaviour Modification Principles Cr.Hrs.3

(Formerly 017.244) The fundamental assumptions, principles, and procedures of behaviour modification are described and illustrated by applications to normal and abnormal human behaviour. Students may also conduct supervised projects in applied areas or in basic behavioural research. Students may not hold credit for both PSYC 2440 (017.244) and PSYC 2441 (017.244). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2450** Behaviour Modification Applications Cr.Hrs.3

(Formerly 017.245) Guidelines for designing, implementing,



and evaluating behaviour modification applications are described in detail. Students may also conduct supervised projects in applied areas or in basic behavioural research. Students may not hold credit for both PSYC 2450 (017.245) and PSYC 2451 (017.245). Prerequisite: a grade of "C" or better in PSYC 2440 (017.244) or PSYC 2441 (017.244).

**PSYC 2460 Dyadic Relations Cr.Hrs.3**

(Formerly 017.246) This course covers friendship formation and dyadic relations - linking, liking, loving, and leaving from an empirically oriented psychological perspective. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2470 Learning Foundations of Psychology Cr.Hrs.3**

(Formerly 017.247) Examines basic learning processes, along with examples of how psychologists study them. Emphasis is placed on how knowledge of basic learning processes can help us understand complex human behaviour. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2480 Cognitive Processes Cr.Hrs.3**

(Formerly 017.248) An introduction to the higher mental processes from an information processing perspective. Topics include attention, cognitive development, imagery, language, memory and problem-solving. Extensive reference will be made to recent experimental findings. Students may not hold credit for both PSYC 2480 (017.248) and PSYC 2481 (017.248). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2500 Elements of Ethology Cr.Hrs.3**

(Formerly 017.250) This course involves one three-hour lecture meeting and one laboratory per week and concerns the study of animal behaviour through lectures, films, and field trips. Parakeets, flies, and/or ducklings plus one animal of the student's choice will be observed. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2510 Comparative Psychology Cr.Hrs.3**

(Formerly 017.251) This course examines the viability of comparative psychology today, the type of subjects used in comparative psychology research, its history and background, some applications and contemporary viewpoints, and its current status. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2520 Orientations to Psychological Systems Cr.Hrs.3**

(Formerly 017.252) Examines and contrasts humanistic,

psychodynamic, cognitive, and behavioural psychology with regard to consciousness vs. the unconscious, free-will vs. determinism, holism vs. analysis, purpose vs. past influences, transcendentalism vs. physicalism, and focus on the person vs. focus on problems. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 2860 Language Acquisition Cr.Hrs.3**

The study of first language acquisition from infancy through childhood. Aspects of phonology, morphology, pragmatics and syntax acquisition are discussed, as well as formal theories of acquisition, second language and bilingual acquisition, atypical development and the relationship of language acquisition with literacy. Also offered as Linguistics LING 2860. Students may not hold credit for both PSYC 2860 and LING 2860 (126.286). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or LING 1200 (126.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of instructor.

**8.25.3 Psychology -3000 Level**

**PSYC 3130 Introduction to Health**

Psychology Cr.Hrs.3

This course offers a survey of psychological issues in health and illness. Major topics will include the biopsychosocial approach, mental models of illness, pain, stress and coping, health-damaging and health-promoting behaviours, and psychological issues in medical care. Students may not hold credit for PSYC 3130 and any of: PSYC 3131 or PSYC 3530 when titled "Health Psychology." Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)].

**PSYC 3160 Perception and Attention Cr.Hrs.3**

This lecture course will provide you with a basic introduction to the characteristics and processes of human perception. A scientific approach will be used with specific emphasis on exploring the relation between experimental evidence and theory. Topics to be covered include transmission of information through the visual and auditory systems, visual and auditory pattern recognition, selective and divided attention, and the role of attention and interpretation in perception. Students may not hold credit for both PSYC 3160 and PSYC 3441 (017.344). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 3170 Research in Cognitive**

Psychology Cr.Hrs.3

This course will provide an introduction to conducting research in human perception and cognition. Students will gain experience in all facets of the research process including: critical reading of relevant literature, experimental design and preparation, data collection and analysis, and report writing. Activities may include critiques of published research, research proposals, individual and/or group projects, research reports, and individual and/or group



presentations. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] and written consent of instructor.

**PSYC 3200 Thinking Critically About Psychological Research Cr.Hrs.3**

This course will teach students to apply critical thinking skills in the evaluation of psychological research. Core components will include the logic of research design, analysis and interpretation, the description of psychological studies, and the critical reading of published research. Activities will include the preparation of critiques of research claims published in both academic journals and in the mainstream press, sample research proposals, individual and/or group projects, and individual and/or group presentations. Prerequisite: [a grade of "C" or better in both of PSYC 2250 (017.225) and PSYC 2260 (017.226)] or [a grade of "C" or better in both PSYC 2251 (017.225) and PSYC 2261 (017.226)] or [a grade of "C" or better in the former PSYC 2300 (017.230)].

**PSYC 3340 Design and Analysis for Psychological Experiments Cr.Hrs.3**

Methods for controlling sources of internal validity in psychological experiments, such as randomization, blocking, factorial configurations, and repeated measurements, will be discussed. Descriptive and multivariate methods of analysis will also be introduced. The use of statistical packages will be illustrated. Students may not hold credit for both PSYC 3340 and the former PSYC 4570 (017.457). Prerequisite: [a grade of "C" or better in both PSYC 2250 (017.225) and PSYC 2260 (017.226)] or [a grade of "C" or better in both PSYC 2251 (017.225) and PSYC 2261 (017.226)] or [a grade of "C" or better in the former PSYC 2300 (017.230)], and written consent of department head.

**PSYC 3350 Behavioural Neuroscience Cr.Hrs.3**

This course presents the fundamentals of the neurobiology of behaviour. Special importance is placed on the information-processing properties of the nervous system in order to provide a uniform framework for the understanding of such topics as perception, attention, sleep and wakefulness, motivation, and learning. Students may not hold credit for PSYC 3350 and any of: PSYC 3351 or the former PSYC 3330 (017.333) or the former PSYC 3331 (017.333). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 3360 Experimental Child Psychology Cr.Hrs.3**

(Formerly 017.336) Selected topics in child psychology are reviewed, such as infant learning and the development of memory processes. Students learn methods for observing child behaviour through laboratory assignments. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 3390 Thinking Cr.Hrs.3**

(Formerly 017.339) The class surveys work in cognitive science. Topics include probabilistic reasoning, heuristics and biases, artificial neural networks, mental representation

of number, and the cognitive unconscious. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 3430 Sensory Processes Cr.Hrs.3**

(Formerly 017.343) A review of the structure and function of biological receptor systems and how they mediate information about the environment. It includes such topics as receptor transduction, neural correlates of sensation, and neural models of sensory discrimination. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 or in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] and [a grade of "C" or better in one of the following: PSYC 2360 (017.236), or PSYC 3350, or PSYC 3351, or both BIOL 1020 and BIOL 1030, or both BIOL 1021 and BIOL 1031, or BIOL 2410, or the former ZOO 2530 (022.253), or the former PSYC 3330 (017.333), or the former PSYC 3331 (017.333)].

**PSYC 3450 Psychology of Personality Cr.Hrs.3**

(Formerly 017.345) The study of theory and research on the principles affecting personality development and structure. Students may not hold credit for both PSYC 3450 (017.345) and PSYC 3451 (017.345). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 3460 Abnormal Psychology Cr.Hrs.3**

(Formerly 017.346) The study of theory and research on abnormal human behaviour. The major forms of psychological disturbance are discussed. An introduction to the prevention and treatment of psychological disturbances is given. Students may not hold credit for both PSYC 3460 (017.346) and PSYC 3461 (017.346). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 3490 Individual Differences Cr.Hrs.3**

(Formerly 017.349) This course is concerned with the systematic way in which individuals vary. Topics include individual differences as a function of sex, age, race, and socioeconomic status. Specific behaviours to be studied include reaction-time differences, differences in intelligence, differences in aptitudes and interests, and differences in motor abilities. The reasons for some of these differences will also be delineated. Hence genetic and physiological factors, as well as psychological explanations for individual differences, will be studied. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 3520 Independent Research in Psychology 1 Cr.Hrs.3**

(Formerly 017.352) Students carry out a research project and write a paper. Research may include historical, theoretical or experimental analyses of psychological problems. Normally available only to third and fourth year



students who are in Honours Psychology or who are Psychology Majors and have completed one of: both PSYC 2250 (017.225) and PSYC 2260 (017.226), or both PSYC 2251 (017.225) and PSYC 2261 (017.226), or the former PSYC 2300 (017.230). A student may not hold credit for more than two of PSYC 3520 (017.352) or PSYC 3560 (017.356) or PSYC 3590 (017.359). Prerequisite: prearranged written consent of an individual instructor and written consent of department head.

**PSYC 3530 Contemporary Issues 1 Cr.Hrs.3**

(Formerly 017.353) The content of this course will vary from year to year, but in general it will entail either some specific topic of prominent interest in psychology or a psychological analysis of some problem of current public interest. Students may not hold credit for both PSYC 3530 (017.353) and PSYC 3531 (017.353). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**PSYC 3540 Contemporary Issues 2 Cr.Hrs.3**

(Formerly 017.354) The content of this course will vary from year to year, but in general it will entail either some specific topic of prominent interest in psychology or a psychological analysis of some problem of current public interest. Students may not hold credit for both PSYC 3540 (017.354) and the former PSYC 3541 (017.354). Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**PSYC 3560 Supervised Field Study in Psychology Cr.Hrs.3**

(Formerly 017.356) Students usually do supervised field work in a community setting and write a paper. Normally available only to third and fourth year students who are in Honours Psychology or who are Psychology Majors. A student may not hold credit for more than two of: PSYC 3520 (017.352), PSYC 3560 (017.356), PSYC 3590 (017.359). Prerequisite: prearranged written consent of an individual instructor and written consent of department head.

**PSYC 3580 Language and Thought Cr.Hrs.3**

(Formerly 017.358) An examination of recent investigations of human language behaviour. Emphasis will be placed on natural language phenomena, which will be examined within the framework of modern theories of thought. Some of the topics considered include communication, the development of language, and natural language comprehension. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 3590 Independent Research in Psychology 2 Cr.Hrs.3**

(Formerly 017.359) Students carry out a research project and write a paper. Research may include historical, theoretical or experimental analysis of psychological

problems. Normally available only to third and fourth year students who are in Honours Psychology or who are Psychology Majors and have completed one of: both PSYC 2250 (017.225) and PSYC 2260 (017.226), or both PSYC 2251 (017.225) and PSYC 2261 (017.226), or the former PSYC 2300 (017.230). A student may not hold credit for more than two of: PSYC 3520 (017.352), PSYC 3560 (017.356), PSYC 3590 (017.359). Prerequisite: prearranged written consent of an individual instructor and written consent of department head.

**PSYC 3610 Memory Cr.Hrs.3**

(Formerly 017.361) Selected topics in human memory are reviewed, including the physiological and chemical bases for learning and memory, primary determinants of forgetting, memory models, nonverbal memory, organization in memory, and the use of mnemonic schemes to improve memory. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.

**PSYC 3630 Psychological Measurement and Assessment Cr.Hrs.3**

(Formerly 017.363) A study of the basic concepts of measurement in psychology and the application of these concepts in selected areas of psychology. The principal topics of the course will be historical foundations, basic concepts such as reliability, validity, and invariance, the use of different tests and instruments, scaling, and the unique aspects of measurement encountered in different areas of psychology. Students may not hold credit for both PSYC 3630 (017.363) and PSYC 3631 (017.363). Prerequisite: [a grade of "C" or better in both PSYC 2250 (017.225) and PSYC 2260 (017.226)] or [a grade of "C" or better in both PSYC 2251 (017.225) and PSYC 2261 (017.226)] or [a grade of "C" or better in the former PSYC 2300 (017.230)] or written consent of department head.

**PSYC 3650 Introduction to Clinical Psychology Cr.Hrs.3**

(Formerly 017.365) Clinical psychology is presented as both a scientific and an applied discipline. Such topics as assessment, intervention, research, and professional issues are covered. Prerequisite: [a grade of "C" or better in one of: PSYC 3450 (017.345) or PSYC 3451 (017.345) or PSYC 3460 (017.346) or PSYC 3461 (017.346)] or written consent of department head.

**PSYC 3660 Sport Psychology Cr.Hrs.3**

(Formerly 017.366) This course examines the use of psychological knowledge to enhance the development of performance and satisfaction of athletes and others associated with sports. Topics include improving skills of athletes, motivating practice performance, increasing the effectiveness of coaches, and mental preparation for competition. Prerequisite: [a grade of "C" or better in PSYC 1200 (017.120) or the former PSYC 1201 (017.120)] or [a grade of "C" or better in both PSYC 1211 (017.121) and PSYC 1221 (017.122)] or written consent of department head.



### 8.25.3 Psychology -4000 Level

#### **PSYC 4400** Theories of Close Relationships Cr.Hrs.3

Students will be exposed to theories that apply to the initiation, development, maintenance, and dissolution of relationships. The primary focus will be on evolutionary theory, attachment styles, communal and exchange relationships, equity theory, interdependence theory and the investment model, attributional theories, and theories of love. Students may not hold credit for both PSYC 4400 and PSYC 4540 (017.454) with the topic "Theories of Close Relationships." Prerequisite: written consent of department head.

#### **PSYC 4410** Cross-cultural Social Psychology Cr.Hrs.3

Cross-cultural psychology is the critical and comparative study of the linkages between cultural norms and thoughts, feeling and behaviour. This course focuses on Cross-cultural Social Psychology. Therefore the assigned readings deal with topics that Social Psychology, in general, examines. Students may not hold credit for both PSYC 4410 and PSYC 4540 (017.454) with the topic "Cross-cultural Social Psychology." Prerequisite: written consent of department head.

#### **PSYC 4420** Neuroimaging: Imaging Thoughts Cr.Hrs.3

This course will explore how neuroimaging can illuminate our models of various aspects of cognition, including attention, vision, language, memory and learning, executive functions, emotion and various neuropathologies. Students may not hold credit for both PSYC 4420 and PSYC 4540 (017.454) with the topic "Imaging Thoughts." Prerequisite: written consent of department head.

#### **PSYC 4430** Vision: Perception and Action Cr.Hrs.3

An intensive review of current research and theories in visual processes. Both behavioural and physiological aspects of vision will be considered. Course goals are directed at offering a better understanding of visual perception and the visual control of action. Students may not hold credit for both PSYC 4430 and PSYC 4540 (017.454) with the topic "Vision Science." Prerequisite: written consent of department head.

#### **PSYC 4440** Readings in Autism Spectrum Disorders Cr.Hrs.3

Students will read recent research in Autism Spectrum Disorders, acquire skills to critically evaluate empirical evidence, and examine implications for practice. Among the topics covered will be assessment, diagnosis, epidemiology, and applied behaviour analysis early intervention. Students may not hold credit for both PSYC 4440 and PSYC 4540 (017.454) with the topic "Autism Spectrum Disorders." Prerequisite: written consent of department head.

#### **PSYC 4450** Animal Behaviour 1 Cr.Hrs.3

(Formerly 017.445) The nature-nurture controversy will be discussed, followed by a survey of the diverse behaviours relating to the physical environment (e.g., food storage); predation (e.g. trapping); defence (e.g., camouflage); and migration. Prerequisite: written consent of department head.

#### **PSYC 4460** Animal Behaviour 2 Cr.Hrs.3

(Formerly 017.446) A more detailed analysis of selected

topics including communication, animal populations, and the social use of space in humans and infrahumans. Prerequisite: written consent of department head.

#### **PSYC 4490** Comparative Psychology Cr.Hrs.3

(Formerly 017.449) A survey of similarities and differences of behaviour at various phylogenetic levels. Topics include evolution, genetics, sensory processes, neuropsychology, learning processes, and social behaviour. Prerequisite: written consent of department head.

#### **PSYC 4492** Psychology of Addiction Cr.Hrs.3

This course will introduce the psychology of addictive disorders, including their history, prevalence and incidence, and basic drug actions. It will also survey research on biological, psychological, and social factors that contribute to the development and maintenance of addictive disorders. Students may not hold credit for both PSYC 4492 and PSYC 4540 (017.454) when titled "Introduction to the Psychology of Addiction." Prerequisite: written consent of department head.

#### **PSYC 4510** Applied Behaviour Analysis in Developmental Disabilities Cr.Hrs.3

Students will read recent applied behaviour analytic research in behavioural assessments and interventions for people with developmental disabilities, acquire skills to critically evaluate empirical evidence, and examine implications for practice. Students may not hold credit for both PSYC 4510 and PSYC 4540 (017.454) with the topic "Research in Developmental Disabilities." Prerequisite: written consent of department head.

#### **PSYC 4520** Honours Research Seminar Cr.Hrs.6

(Formerly 017.452) In first term there will be an examination of important experimental issues, and several experimental assignments. In addition, each student will propose a research project of greater scope to be conducted under the supervision of a Psychology staff member. In second term, students will carry out their projects and report their findings. Prerequisite: [90 credit hours towards honours program, including a grade of "C" or better in PSYC 3200, and three credit hours in PSYC 3630 (017.363) or PSYC 3631 (017.363) or PSYC 3340 or the former PSYC 4500 (017.450) or the former PSYC 4570 (017.457)], and written consent of department head.

#### **PSYC 4540** Contemporary Issues 1 Cr.Hrs.3

(Formerly 017.454) Course content may vary from year to year, but in general it will entail either some specific topic of prominent interest in psychology or a psychological analysis of some problem of current public interest. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

#### **PSYC 4560** Health Psychology Cr.Hrs.3

(Formerly 017.456) This course focuses on understanding how psychological factors contribute to the promotion and maintenance of good health, to the prevention and treatment of illness, and to recovery from or adjustment to existing illness. Prerequisite: written consent of department head.

#### **PSYC 4562** Social Psychology and Health Cr.Hrs.3

This course uses theories and concepts from social/personality psychology to gain a better appreciation of what health is and how to achieve it, at the individual and



population levels. Students may not hold credit for both PSYC 4562 and PSYC 4540 (017.454) with the topic "Social Psychology and Health." Prerequisite: written consent of department head.

**PSYC 4564 Self-regulation and Health Cr.Hrs.3**

This course examines how self-regulatory processes such as goal-setting and self-awareness can affect behaviours that promote or undermine human health. A wide range of health-related behaviours is considered such as smoking, exercise, safe-sex practices, and eating. Students may not hold credit for both PSYC 4564 and PSYC 4540 (017.454) with the topic "Self-regulation and Health." Prerequisite: written consent of department head.

**PSYC 4566 Psychology of Health and Aging Cr.Hrs.3**

This course considers how adults adapt to the challenges of aging and the accompanying health problems. Seminar discussions will focus on selected psychological theories and related empirical literature regarding belief systems that operate in the face of health- and age-related challenges. Students may not hold credit for both PSYC 4566 and PSYC 4540 (017.454) with the topic "Health and Aging." Prerequisite: written consent of department head.

**PSYC 4580 Elements of Behavioural Pharmacology Cr.Hrs.3**

(Formerly 017.458) Data and theories related to psychoactive agents are introduced, with emphasis on therapeutic drug classes, drugs of abuse, and methodological issues in drug research. The focus is on the behavioural analysis of drug action, but a neuropharmacological analysis is developed where it has a firm relationship to the behavioural analysis. Prerequisite: written consent of department head.

**PSYC 4590 Selected Topics in Social Psychology Cr.Hrs.3**

(Formerly 017.459) A seminar in Social Psychology whose content shall vary from year to year. A description of the course is available in advance at the Psychology general office. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**PSYC 4600 Selected Topics in Developmental Psychology Cr.Hrs.3**

(Formerly 017.460) The specific content of this course will vary from year to year. A description of the course is available in advance at the Psychology general office. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**PSYC 4610 Social Cognition Cr.Hrs.3**

(Formerly 017.461) Focus on the processes determining how people perceive themselves and others in their social world. From topics such as causal attribution, psychological control, person memory, and social inference, the course will address selected issues from theoretical and empirical perspectives. Prerequisite: written consent of department head.

**PSYC 4620 Community Mental Health Cr.Hrs.3**

(Formerly 017.462) A seminar covering contemporary issues in community mental health and their relation to

psychological services. Topics include the history of the community mental health movement, de-institutionalization as a social policy, the etiology and epidemiology of mental disorders, recognition of and response to mental disorders, mental health systems, community-based mental health services, and prevention of mental disorders. Students may not hold credit for both PSYC 4620 (017.462) and PSYC 4540 (017.454) offered as Community Mental Health. Prerequisite: written consent of department head.

**PSYC 4630 Behavioural Endocrinology Cr.Hrs.3**

(Formerly 017.463) A comparative approach is adopted to examine how hormones influence a diversity of behaviours through their actions on brain function, the physiological substrates of the behaviours, and their development as evolutionary adaptations. Techniques used by behavioural neuroscientists to study the behavioural and neuroendocrine interactions are surveyed. Prerequisite: [a grade of "C" or better in PSYC 3350 or PSYC 3351 or the former PSYC 3330 (017.333) or the former PSYC 3331 (017.333)] and written consent of department head.

**PSYC 4640 Person X Situation Interactionism Cr.Hrs.3**

We will first explore research demonstrating the impact of personality and situations, separately, on behaviour. We then examine the debate that arose about whether understanding the person or situation would have the most scientific merit. We spend the remainder (and the majority) of the course discussing the theories and research that arose from that debate. The majority of this research has an interactionist perspective, taking both the person and his/her situation into account. Students may not hold credit for both PSYC 4640 and PSYC 4540 (017.454) with the topic "Person X Situation Interactionism." Prerequisite: written consent of department head.

## 8.26 Department of Religion

**Head:** (Acting Head) Ian Whicher

**Campus Address/General Office:** 328 Fletcher Argue Building

**Telephone:** 204 474 9516

**Email Address:** [religion@umanitoba.ca](mailto:religion@umanitoba.ca)

**Website:** [umanitoba.ca/religion](http://umanitoba.ca/religion)

### 8.26.1 Program Information

We are a world religions department. Our approach is interdisciplinary and engages a wide range of human activity commonly deemed "religious," seeking to understand how religions function, how religious discourse evolves, why certain religious perspectives gain prominence and how they are contested. We research and teach about a range of religions, past and present, from around the world, investigating the languages, ethical systems, practices, organizations, and institutions within which such religions are defined, refined, rejected, or renewed. Given the diversity of this study, such theoretical and methodological questions are viewed as central to the coherence of our courses, programs, and fields.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree,



see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

**Major Program**

For entry to the Major, the prerequisite is a grade of "C" or better in six credit hours in Religion. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A maximum of 12 credit hours in Religion courses numbered at the 1000-level may be used toward the 30 credit hours for the Major.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

**Minor (Concentration) Program**

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in six credit hours in Religion.

A maximum of 12 credit hours in Religion courses numbered at the 1000-level may be used toward the 18 credit hours for the Minor.

**Honours Program**

**Other**

For the purpose of the Honours and the Major programs, the three areas of study are identified in the course listing with the following letters in brackets after the course title:

- A: Western Religious Traditions
- B: World Religions
- C: Religion and Culture

In addition to courses numbered at the 1000-level, the Department of Religion offers a number of upper-level courses for which there are prerequisites; see .

It is not necessary for students to enter the offerings in Religion by way of courses numbered at the 1000-level. Students in any year or program may register for any course in Religion provided they satisfy course and program prerequisites. With written permission of the department head students may take courses numbered at the 4000-level.

In cooperation with St. Paul's College, the Department of Religion offers an arrangement of courses with special emphasis in Catholic studies as an option for students intending to Major or Minor in Religion. This special emphasis involves completing course RLGN 2850 Contemporary Issues in Roman Catholicism and selecting relevant courses offered in the Faculty of Arts and the School of Art. Contact the Department of Religion prior to registration in order to select appropriate courses.

**8.26.2 Religion**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
6 credit hours in Religion courses	<ul style="list-style-type: none"> <li>• 6 credit hours in Religion courses numbered at the 3000 level (with written consent of the department head, students are permitted to substitute Honours courses in the Major)</li> <li>• 18 credit hours in Religion courses: six credit hours must be taken in each of the following three areas: Western Religious Traditions (A), World Religions (B), and Religion and Culture (C)</li> </ul>		
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
6 credit hours in Religion courses	<ul style="list-style-type: none"> <li>• 12 credit hours in Religion courses numbered at the 4000 level (with written consent of the department head, students may be permitted to substitute courses numbered at the 3000 level)</li> <li>• 30 credit hours in Religion courses: six credit hours must be taken in each of the following three areas: Western Religious Traditions (A), World Religions (B), and Religion and Culture (C)</li> </ul>		
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
6 credit hours in Religion courses	6 credit hours in Religion courses	6 credit hours in Religion courses	



<b>HONOURS SINGLE</b> <sup>1,2,3</sup>			
6 credit hours in Religion courses	<ul style="list-style-type: none"> <li>• 18 credit hours in Religion courses numbered at the 2000 level</li> <li>• 12 credit hours in ancillary options</li> </ul>	<ul style="list-style-type: none"> <li>• 12 credit hours in Religion courses numbered at the 3000 level</li> <li>• 6 credit hours in Religion courses numbered at the 4000 level</li> <li>• 6 credit hours in ancillary options</li> </ul>	<ul style="list-style-type: none"> <li>• 18 credit hours in Religion courses numbered at the 4000 level</li> <li>• 6 credit hours in ancillary options</li> </ul>
<b>HONOURS DOUBLE</b> <sup>1,2,3</sup>			
6 credit hours in Religion courses	<ul style="list-style-type: none"> <li>• 12 credit hours in Religion courses numbered at the 2000 level</li> <li>• 12 credit hours in other Honours field</li> <li>6 credit hours in ancillary options</li> </ul>	<ul style="list-style-type: none"> <li>• 6 credit hours in Religion courses numbered at the 3000 level</li> <li>• 6 credit hours in Religion courses numbered at the 4000 level</li> <li>• 12 credit hours in other Honours field</li> </ul>	<ul style="list-style-type: none"> <li>• 12 credit hours in Religion courses numbered at the 4000 level</li> <li>• 12 credit hours in other Honours field</li> </ul>
<p><b>NOTES:</b></p> <p><sup>1</sup> Honours students will be expected to obtain six credit hours in each of the study areas B and C. In addition, for purposes of the Honours program, study area A is divided into two parts: (a) Bible and (b) the history of Western religion. Normally an Honours student will be expected to obtain six credit hours in each of those two parts.</p> <p>The following courses satisfy Western Religious Traditions (A - Bible): RLG 1120, RLG 1390, RLG 1400, RLG 2150, RLG 2160, RLG 2170, RLG 2760, RLG 3200, RLG 3240, RLG 3780, RLG 3800, RLG 3824, RLG 3830.</p> <p>The following courses satisfy Western Religious Traditions (A – History of Western Religion): RLG 1350, RLG 2036, RLG 2040, RLG 2050, RLG 2140, RLG 2520, RLG 2530, RLG 2550, RLG 2560, RLG 2640, RLG 2730, RLG 2770, RLG 2840, RLG 2850, RLG 3280, RLG 3570, RLG 3640, RLG 3870, RLG 4130, RLG 4140, RLG 4150, RLG 4200, RLG 4280.</p> <p><sup>2</sup> Ancillary options are courses taken from outside the Honours field of study.</p> <p><sup>3</sup> Honours courses: all 4000 level courses.</p>			

### 8.26.3 Religion -1000 Level

#### **RLGN 1120** Biblical Hebrew (A) Cr.Hrs.6

(Formerly 020.112) An introductory course with emphasis on basic grammar and syntax. Students will learn to read simple biblical narratives. (Not acceptable for credit towards a Major or Minor in Religion.) Students may not hold credit for RLG 1120 (020.112) and any of: HEB 1120 or the former SEM 1120 (055.112).

#### **RLGN 1320** Introduction to World Religions

(B) Cr.Hrs.6

(Formerly 020.132) An historical survey of the major living religions in terms of their development, ideas and practices as reflected in their literature. Students may not hold credit for RLG 1320 (020.132) and any of: RLG 1323 or RLG 1325 or the former RLG 1321 (020.132).

#### **RLGN 1350** The History of Eastern Christianity

(A) Cr.Hrs.6

(Formerly 020.135) This course examines the general history of Eastern Christianity. It studies the doctrines and organization of the churches, their spirit and attitude to church unity.

#### **RLGN 1390** Readings in Biblical Hebrew 1

(A) Cr.Hrs.3

(Formerly 020.139) Reading and translation of selected prose portions of the Hebrew Bible. Vocabulary building and review of basic Hebrew grammar. Prerequisite: [a grade of "C" or better in RLG 1120 (020.112) or HEB 1120 or the former SEM 1120 (055.112)] or written consent of instructor or department head.

#### **RLGN 1400** Readings in Biblical Hebrew 2

(A) Cr.Hrs.3

(Formerly 020.140) Reading and translation of selected poetic portions of the Hebrew Bible. Vocabulary building and advanced grammar. Prerequisite: [a grade of "C" or better in RLG 1390 (020.139)] or written consent of instructor or department head.

#### **RLGN 1410** Death and Concepts of the Future

(C) Cr.Hrs.3

(Formerly 020.141) The course investigates theories, images, and rituals of death, dying and the afterlife in selected world religions.



**RLGN 1420 Ethics in World Religions (C) Cr.Hrs.3**  
(Formerly 020.142) Examination of the ethical teachings of world religious traditions. Attention will be given to such questions as the nature of the good or virtue, the place of law or commandments, the relationship between religion and morality, the concepts of moral community and the moral self. Students may not hold credit for both RLGN 1420 (020.142) and RLGN 1421 (020.142).

**RLGN 1424 Religion and Sexuality (B) Cr.Hrs.3**  
An introduction to world religions through the lens of sexuality, exploring how sexual desires and practices are celebrated, regulated, imagined and constructed in different religions. Topics may include pleasure, procreation, sexual and gender identities, marriage, asceticism, erotic imagery of divine beings and divine-human relations.

**RLGN 1430 Food: Religious Concepts and Practices (C) Cr.Hrs.3**  
(Formerly 020.143) This course explores the cultural (communal and social) dimensions of the major world religions through examination of food concepts and practices. Topics studied include: food symbols and rituals in the theory of religion; food proscription and endorsements ("dietary laws"); food in ritual time and space ("menus" and "liturgies"); concepts of plenty and concepts of dearth (ethics of food distribution); food and communication; food and gender/food and the body; feasting and fasting; food, religion and "consumer culture."

**RLGN 1440 Evil in World Religions (C) Cr.Hrs.3**  
(Formerly 020.144) The course introduces students to perspectives on evil in selected world religions.

**RLGN 1450 Religion and the Media (C) Cr.Hrs.3**  
(Formerly 020.145) This course investigates representations of religion in popular media. Through study of a range of media, from newspapers to the internet, the course explores cultural stereotypes about religion, asking how religions are represented, and how they represent themselves, in popular culture.

### 8.26.3 Religion -2000 Level

**RLGN 2010 Introduction to Hinduism (B) Cr.Hrs.3**  
An overview of the rich and multi-faceted tradition of Hinduism, dealing with its history and development from ancient to modern times. Students may not hold credit for both RLGN 2010 and the former RLGN 2860 (020.286).

**RLGN 2020 Introduction to Buddhism (B) Cr.Hrs.3**  
A general introduction to the beliefs, practices, and history of the main forms of Buddhism, including Indian Buddhism, Tibetan Buddhism, and Zen. Students may not hold credit for both RLGN 2020 and the former RLGN 2830 (020.283).

**RLGN 2030 Psychology and Religion (C) Cr.Hrs.3**  
(Formerly 020.203) An examination of selected modern and contemporary psychology and religion interactions. Students may not hold credit for both RLGN 2030 (020.203) and the former RLGN 2211 (020.221).

**RLGN 2036 Introduction to Christianity (A) Cr.Hrs.3**  
This course provides an introduction to the history of Christianity from its earliest beginnings to the present. It will

also focus on Christianity's main ideas and practices. Students will also be introduced to key concepts and debates in the study of religion using Christianity as a test case.

**RLGN 2040 Early Modern/Modern Christianity (A) Cr.Hrs.3**

(Formerly 020.204) A chronological survey of Christian practices and teachings from 1500-1900. This course examines dimensions of the "modernization" of Western Christianity, giving particular emphasis to the Protestant and Catholic Reformations, including changes in ritual practice, major theological and other doctrinal disputes, social formations, "elite" and "popular" religion, institutional developments, artistic and literary production. These will be considered in the larger context of the development of "national" churches and the complicated role of Christian ideas and institutions in colonial enterprises, with attention given both to propagation of Western Christianity and its establishment as a "world religion", and to particular local varieties and conditions of Western Christianity.

**RLGN 2050 Modern and Contemporary Christianity (A) Cr.Hrs.3**

(Formerly 020.205) A survey of 20th century Christianity. The course will include an examination of the changing religious, social, and political practices and institutional forms of Christianity since 1900. Students may not hold credit for both RLGN 2050 (020.205) and the former 020.228.

**RLGN 2060 Religion and Violence (C) Cr.Hrs.3**  
(Formerly 020.206) Violence of many kinds - physical and non-physical, by and against individuals, within and amongst religious groups - plays an integral role in all religious traditions and systems. This course explores this role within the framework of an historical approach to world religions. Themes covered may include: theories of religion and violence; sacrifice; martyrdom; symbolic violence; iconoclasm; blasphemy; heterodoxy and discipline; religious toleration; religious warfare; religion and cultural resistance; religion and domestic violence; religion and non-violence.

**RLGN 2070 Indigenous World Religions (B) Cr.Hrs.6**

(Formerly 020.207) This course surveys the complex category "indigenous world religions." The course includes historical and critical study of the category "indigenous religion," consideration of various developments that have brought the category to the forefront of the scholarly study of world religions, and survey of methodologies currently available for the study of indigenous traditions. The course addresses a number of themes - oral traditions, myth and social formation, shamanic practices, colonization and religious aspects of resistance, religion and postcolonial identities - approaching these themes through study of indigenous traditions of North and South America, Africa, Asia, Oceania, and Europe.

**RLGN 2090 Issues in Science and Religion (C) Cr.Hrs.3**

A consideration of some of the major issues arising from the intersection of the concepts and interests of the natural sciences with those of the religions of the world.

**RLGN 2100 Approaches to the Qur'an (B) Cr.Hrs.3**  
An introduction to the main features, structure, and contents of the Qur'an as a text and to the manifold ways it has been



received, understood, and interpreted by Muslims for over 1400 years.

**RLGN 2110 Religion and Healing (C) Cr.Hrs.3**

A study of concepts of illness, health and healing, of therapeutic rituals, and of healing figures, in selected world religions.

**RLGN 2120 Problems of Faith and Reason (C) Cr.Hrs.3**

An historical and critical study of selected attempts to solve problems concerning the relationship between religious faith and natural reason. Students may not hold credit for both RLG 2120 and the former RLG 2630 (020.263).

**RLGN 2130 Religion and Dance (C) Cr.Hrs.3**

An examination of the role of movement and dance in world religions and of attempts to establish a theoretical framework for the study of movement within the discipline.

**RLGN 2140 Introduction to Judaism (A) Cr.Hrs.3**

An exploration of Jewish religious experience: the rhythms of time, the sensory life, sacred texts, collective memory, rules and resistance to rules. The course will introduce Jewish ways of learning, and consider Judaism as a test case for concepts in religious studies, including "religion" itself.

**RLGN 2150 The Talmud (A) Cr.Hrs.3**

The Babylonian Talmud rivals the Bible in its importance for Jewish life and thought. It is not a book which can simply be read but one which must be studied with others. Students will learn how to study this multifaceted text which encompasses law, folklore, gender politics, and theology.

**RLGN 2160 Introduction to the Hebrew Scriptures (A) Cr.Hrs.3**

(Formerly 020.216) An introduction to the historical and critical study of the writings of the "Old Testament," the Hebrew Scriptures. Students may not hold credit for both RLG 2160 and RLG 2161.

**RLGN 2170 Introduction to the New Testament (A) Cr.Hrs.3**

(Formerly 020.217) An introduction to the historical and critical study of the Christian "New Testament." Students may not hold credit for both RLG 2170 and RLG 2171.

**RLGN 2180 Theory of Nature (C) Cr.Hrs.3**

(Formerly 020.218) While the content of this course will vary year-to-year, its constant purpose will be to introduce students to some of the many ways in which "nature" has been theorized. The course will explore historical and cultural contexts in which selected theories of nature have developed. It will also explore implications of different theories of nature for environmental ethics.

**RLGN 2410 Religion in Canada (C) Cr.Hrs.6**

(Formerly 020.241) The goal of the course is to provide an outline history of the religious institutions and groups in Canada and to explore how they have responded to the peculiar character of Canadian life. Students may not hold credit for RLG 2410 (020.241) and any of: RLG 2413 or RLG 2415 or the former RLG 2411 (020.241).

**RLGN 2510 Mennonite Studies (C) Cr.Hrs.6**

(Formerly 020.251) A study of the history and theology of the Mennonite people from the 16th century to the present.

**RLGN 2520 Eastern Christianity in North America (A) Cr.Hrs.3**

(Formerly 020.252) A survey of the history and institutions of the major Eastern Christian bodies in North America. Particular reference will be made to the sociological and economic problems, the question of identity and survival, the problem of unity. Prerequisite: [a grade of "C" or better in RLG 1350 (020.135)] or written consent of department head.

**RLGN 2530 Eastern Christianity in the Contemporary World (A) Cr.Hrs.3**

(Formerly 020.253) A study of some modern-day problems such as: politics, nationalism, geography, culture, secularization, and the question of unity. Particular reference will be made to the problem of the church in Eastern Europe. Prerequisite: [a grade of "C" or better in RLG 1350 (020.135)] or written consent of department head.

**RLGN 2550 History of Early Christian Thought (A) Cr.Hrs.3**

(Formerly 020.255) Christian thought from the second century to Augustine.

**RLGN 2560 History of Medieval Christian Thought (A) Cr.Hrs.3**

(Formerly 020.256) Christian thought from Augustine to the end of the medieval period.

**RLGN 2570 Indian Religious Art and Architecture (B) Cr.Hrs.3**

(Formerly 020.257) A survey of Major periods and themes in Indian art and architecture (Buddhist, Jain, Hindu); iconography, temples, canons of Indian art; life of Buddha, Rama-cycle and Krsna-complex; socioeconomic background.

**RLGN 2590 Religion and Social Issues (C) Cr.Hrs.3**

(Formerly 020.259) The course examines selected ethical-social issues such as abortion, euthanasia, new genetic and reproductive technologies, and environmental and ecological issues, with reference to one or more of the world's religious traditions. Students may not hold credit for both RLG 2590 (020.259) and RLG 2591 (020.259).

**RLGN 2600 Critical Animal Studies: An Introduction (B) Cr.Hrs.3**

This course will introduce students to "the animal" question that has emerged with such significance in recent decades, surveying some key theoretical and ethical issues under debate around the meaning of animality and the difference between human and animal life, and pointing to future challenges posed by "Critical Animal Studies" for the discipline of Religion.

**RLGN 2640 Anti-Semitism and Christianity (A) Cr.Hrs.3**

(Formerly 020.264) A survey of the phenomenon of Anti-Semitism as it relates to the Christian community.



**RLGN 2680 Women and Religion 1 (C) Cr.Hrs.3**  
(Formerly 020.268) Content of this course may vary from year to year. It will address, through contemporary interpretive models, topics of current and ongoing interest in relation to the understanding and role of women in the world's religious traditions.

**RLGN 2690 Women and Religion 2 (C) Cr.Hrs.3**  
(Formerly 020.269) Content of this course may vary from year to year. It will address, through contemporary interpretive models, topics of current and ongoing interest in relation to the understanding and role of women in the world's religious traditions.

**RLGN 2700 Religions of China and Japan (B) Cr.Hrs.6**  
(Formerly 020.270) A study of the history, teachings and developments of Confucianism, Taoism, Shinto and Buddhism in China and Japan from their beginning to the present.

**RLGN 2730 Jews and Judaism in Antiquity (A) Cr.Hrs.3**  
(Formerly 020.273) The study of the Jewish people and their civilization from its origins in the ancient Near East to the completion of the Hebrew Bible and the redaction of the Talmud.

**RLGN 2760 Rabbinic Judaism (A) Cr.Hrs.3**  
(Formerly 020.276) A study of the development of classical rabbinic Judaism from its roots in the Hebrew Bible and the Talmud to the end of the 18th century. Talmud, Law, Mysticism, Theology and Biblical Exegesis are some of the subjects examined.

**RLGN 2770 Contemporary Judaism (A) Cr.Hrs.3**  
(Formerly 020.277) A study of contemporary denominational Judaism and its origins in the classical rabbinic tradition. The focus will be on the denominations active in North America.

**RLGN 2780 Classical Islam (B) Cr.Hrs.3**  
(Formerly 020.278) An examination of the formation, development and expression of classical Islam. Emphasis is placed on the life and teachings of the Prophet Muhammad, the Qur'an, the Sunna, and the Shi'ism.

**RLGN 2790 Contemporary Islam (B) Cr.Hrs.3**  
(Formerly 020.279) A study of the responses of Islamic communities to the pressures of the modern world. Special note will be taken of the relation between Islam and power.

**RLGN 2840 The Second Vatican Council (A) Cr.Hrs.3**  
(Formerly 020.284) An historical and theological analysis of the Second Vatican Council, beginning with the situation of the Roman Catholic Church subsequent to the French Revolution. The course will include study of major Vatican II documents. Particular attention will be given to the legacy of Vatican II and to assessment of the Council's impact on the life of the Roman Catholic Church.

**RLGN 2850 Contemporary Issues in Roman Catholicism (A) Cr.Hrs.3**  
(Formerly 020.285) A survey of major movements, thinkers,

debates and issues in twentieth-century post-Vatican II Roman Catholicism. Particular attention will be given to the following: magisterium and dissent, social justice, women in the church, ecumenical and inter-religious dialogue, and emergent theologies.

### 8.26.3 Religion -3000 Level

**RLGN 3100 Rituals of Death and Mourning (C) Cr.Hrs.3**

(Formerly 020.310) An exploration of the ritual dimensions of death and mourning in selected religious traditions, including such topics as: burial rites, cremation, funeral ceremonies, gender and mourning, grave goods and grave markers, lamentation and social protest, mortuary practices.

**RLGN 3110 Issues in the Study of Religion and Evil (C) Cr.Hrs.3**

(Formerly 020.311) An examination of the construction of evil in discourse and ritual, including such topics as: purity and pollution; social boundaries and identity; norms of conformity and non-conformity; institutions of power and authority; morality and evil.

**RLGN 3120 Religion and Bioethics (C) Cr.Hrs.3**  
(Formerly 020.312) An examination of theoretical and practical bioethical issues and how these are engaged by various religious traditions.

**RLGN 3130 Religion and Modern Thought (C) Cr.Hrs.3**

(Formerly 020.313) The idea that religion is a distinct and unique aspect of human activity is a defining feature of modern thought. This course explores aspects of this understanding of religion in various modern intellectual movements from the sixteenth century to the nineteenth century, considering these movements in their particular historical contexts. Topics covered may include: skepticism, northern humanism, religion and European expansion, atheism, religion and the nation state, religion and early modern science, enlightenment, religion and bourgeoisie, imperialism, religion and revolution, religion and evolution. Students may not hold credit for RLGN 3130 (020.313) and any of: RLGN 3131 or RLGN 3251 (020.325).

**RLGN 3150 Buddhism in East Asia (B) Cr.Hrs.3**  
(Formerly 020.315) An examination of the history and teachings of Buddhism in China and Japan, giving particular attention to processes of adaptation and transformation within the East Asian context.

**RLGN 3160 Tibetan Religious Traditions (B) Cr.Hrs.3**  
(Formerly 020.316) A study of the religious traditions, particularly Buddhism, that have developed from antiquity in Tibet. Students may not hold credit for both RLGN 3160 (020.316) and the former 020.374.

**RLGN 3170 Eastern Religions in the West (B) Cr.Hrs.3**

(Formerly 020.317) This course considers historical Western interactions with, and representations of, Asian religious traditions. Students may not hold credit for both RLGN 3170 (020.317) and the former 020.374.



**RLGN 3190** Images of the Prophet Muhammad: Classical and Contemporary Perspectives (B) Cr.Hrs.3

This course addresses the central place of the Prophet Muhammad in Muslim life and religious practice. It examines sources for the life of Muhammad, considers the Prophet as a model of piety, and gives careful attention to methodological approaches to the study of Islam.

**RLGN 3200** Paul and the Letters (A) Cr.Hrs.3

A study of Paul of Tarsus and his writings, this course will address topics pertaining to the historical Paul, the Pauline and deuterio-Pauline letters, the social history of Pauline communities, and approaches to the study of Paul and his communities. Students may not hold credit for both RLG 3200 and the former RLG 3770 (020.377). Prerequisite: written consent of instructor or department head.

**RLGN 3210** Indian Philosophy (B) Cr.Hrs.3

(Formerly 020.321) This course introduces some of the main philosophical schools of Hindu and Buddhist thought, emphasizing the living history of interaction and debate between the various traditions.

**RLGN 3220** Indian Religion and Society (C) Cr.Hrs.3

(Formerly 020.322) This course investigates selected topics in religion and society in the region of the Indian sub-continent. Topics will vary from year to year, ranging from a focus on marriage to a study of Buddhist monks and the politics of civil war in Sri Lanka.

**RLGN 3230** Gender in Early Christianity (C) Cr.Hrs.3

(Formerly 020.323) This course examines the light shed by ancient writings on the role(s) of women in ancient Christian groups, and on the ideologies of gender promoted or assumed by these groups. Thus the focus, while predominately on women, will extend to the way in which gender identities were constructed and adhered to by males and females in early Christianity.

**RLGN 3240** Jesus and the Gospel Writings

(A) Cr.Hrs.3  
(Formerly 020.324) The aim of this course is to develop a sophisticated understanding of the New Testament Gospels and their sources, and the ideas these writings were intended to communicate; also to reconstruct the outlines of a history of the earliest traditions about Jesus based on the analysis of these writings.

**RLGN 3260** Indian Buddhism (B) Cr.Hrs.3

A thematic and historical study of Indian Buddhism from its origin to its disappearance. Topics covered include early Buddhism, Buddhist doctrine and philosophy, and the development of Mahāyāna and Vajrayāna.

**RLGN 3266** Readings in Buddhist Texts (B) Cr.Hrs.3

This is a course intended for students who have completed RLG 2020 Introduction to Buddhism, and are interested in pursuing a more in-depth study of Buddhism. Following a discussion format, we will investigate Buddhist texts and ethnographic case studies and material from a range of traditions and historical periods. Prerequisite: [a grade of "C" or better in RLG 2020] or written consent of instructor.

**RLGN 3270** Guru and Disciple (B) Cr.Hrs.3

A study of the role of the guru in India, and of the dynamic of guru and disciple, utilizing traditional Hindu sources as well as contemporary writings.

**RLGN 3280** Hasidism (A) Cr.Hrs.3

Hasidic Jews, known for their tales, melodies, distinctive garb and strict traditionalism, belong to one of the most successful modern Jewish religious movements. This course explores Hasidism, from its origins in eighteenth-century Ukraine to the present, through its own stories and spiritual teachings as well as scholarly perspectives.

**RLGN 3530** Contemporary Issues 1 Cr.Hrs.3

(Formerly 020.353) Content of this course will vary from year to year but it will deal with some specific topic of current interest in religion, some aspect of methodology in the study of religion, or an analysis from a religious perspective of some problem of current public interest. Students may not hold credit for both RLG 3530 (020.353) and RLG 3531 (020.353). Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**RLGN 3540** Contemporary Issues 2 Cr.Hrs.3

(Formerly 020.354) Content of this course will vary from year to year but it will deal with some specific topic of current interest in religion, some aspect of methodology in the study of religion, or an analysis from a religious perspective of some problem of current public interest. Students may not hold credit for RLG 3540 (020.354) and RLG 3541 (020.354). Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**RLGN 3570** Major Thinkers in the Eastern Christian Tradition (A) Cr.Hrs.6

(Formerly 020.357) An examination of some major figures together with certain specific problems and special movements in the history of Eastern Christian thought. Prerequisite: [a grade of "C" or better in RLG 1350 (020.135)] or written consent of department head.

**RLGN 3640** Religion in the Hellenistic World (A) Cr.Hrs.3

(Formerly 020.364) A study of the philosophical, social, and religious context in which the religions of Judaism and Christianity emerged. Prerequisite: written consent of instructor or department head.

**RLGN 3750** Topics in Indian Religious Art and Architecture (B) Cr.Hrs.3

(Formerly 020.375) The course will focus on one or more of the religious dimensions of the following: selected motifs in Indian art, the art and architecture of a particular region or epoch, the theoretical assumptions underlying Indian art.

**RLGN 3780** Selected New Testament Literature and Themes (A) Cr.Hrs.6

(Formerly 020.378) An intensive study of selected documents and/or themes from the New Testament. Prerequisite: [a grade of "C" or better in RLG 2160 (020.216) or RLG 2161] and [a grade of "C" or better in RLG 2170 (020.217) or RLG 2171] or written consent of



instructor or department head.

**RLGN 3800** Selected Old Testament Literature and Themes (A) Cr.Hrs.6

(Formerly 020.380) An intensive study of selected writings or themes of the Old Testament (the Tanach). Prerequisite: [a grade of "C" or better in RLG 2160 (020.216) or RLG 2161] and [a grade of "C" or better in RLG 2170 (020.217) or RLG 2171] or written consent of instructor or department head.

**RLGN 3824** Kabbalah (A) Cr.Hrs.3

Kabbalah is a centuries-old stream of Jewish thought and practice which encompasses mysticism, ethics, spiritual practice and magic. Students will come away from this course with a working knowledge of the Zohar, the central text of Kabbalah, its radical theology and its mythical-symbolic mode of expression. The course also explores the influence of the Zohar within Judaism and beyond and related scholarly debates. Students may not hold credit for both RLG 3824 and the former JUD 3390 (055.339).

**RLGN 3830** The Bible as Story (A) Cr.Hrs.3

A study of the manner in which biblical storytellers present their tales and the ways in which these narratives have been retold ever since. Particular attention will be paid to Midrash, the tradition of creative retelling of biblical tales. Students may not hold credit for both RLG 3830 and the former RLG 3840 (020.384). Prerequisite: written consent of instructor or department head.

**RLGN 3850** Story and Storytelling: Religious Narratives in Context and Performance (C) Cr.Hrs.3

(Formerly 020.385) An investigation of the importance of narrative in selected religious traditions. The course will survey a variety of stories in their religious contexts, giving particular attention to the following issues: orality and textual authority, transmission and transformation, interpretation and power. The course will involve study of various approaches to myth and narrative analysis, both of textual sources and of performative traditions.

**RLGN 3870** The Thought of Bernard Lonergan (A) Cr.Hrs.3

(Formerly 020.387) A study of the thought of the twentieth-century Canadian Jesuit, Bernard Lonergan, including his work on method in theology, on ways of knowing and on ethics.

### 8.26.3 Religion -4000 Level

**RLGN 4060** The Yoga Tradition (B) Cr.Hrs.3

(Formerly 020.406) This course explores the rich, diverse, and highly complex Yoga tradition, emphasizing classical and medieval forms of Yoga philosophy and practice within Hinduism. As well as tracing historical development of the Yoga tradition, the course highlights the meaning and purpose of Yoga in its classical expression and considers the growing popularity and relevance of Yoga in the modern world. Prerequisite: written consent of department head.

**RLGN 4070** Prophets and/or Revolutionaries: Christianity and Political Culture since 1500 (C) Cr.Hrs.3

(Formerly 020.407) This course explores both the material

and ideological circumstances linking major religious and political upheavals in "the West" over the course of the modern period. Using case studies (e.g. the German Peasants' War / Radical Reformation; the Puritan Revolution / English Civil War; the French Revolution; The Riel Revolt; contemporary Guatemala) from the sixteenth to the twentieth centuries, the course introduces students of religion to the methods and practices of the "social history of ideas." Prerequisite: written consent of department head.

**RLGN 4080** Critical Theory and Religion (C) Cr.Hrs.3

(Formerly 020.408) An examination of the work of the Frankfurt School (Theodor Adorno, Max Horkheimer, and Herbert Marcuse) and Jürgen Habermas as it relates to the study of religion. Topics will include: the nature and scope of reason and enlightenment, disenchantment and modernity, ideology and ideology critique, and the separation of science, morality, and art. Prerequisite: written consent of department head.

**RLGN 4100** Advanced Studies in Buddhism (B) Cr.Hrs.3

(Formerly 020.410) An in-depth study of selected topics from the wide cultural and historical range of Buddhist traditions. Prerequisite: written consent of department head.

**RLGN 4110** Studies in Religion and Cultural Memory (C) Cr.Hrs.3

(Formerly 020.411) An examination of selected cultural memory and religion topics. Prerequisite: written consent of department head.

**RLGN 4130** Calvin and the Rise of Anglicanism (A) Cr.Hrs.3

(Formerly 020.413) An advanced study of the major religious insights of John Calvin in relation to the rise of Anglicanism in the 16th century. Prerequisite: written consent of department head.

**RLGN 4140** Luther and the Rise of Anabaptism (A) Cr.Hrs.3

(Formerly 020.414) The course explores the exclusive commitment to the Bible and the notable distance from Rome which Martin Luther and the evangelical Anabaptists shared; the course also explores their mutual differences. Traditional Catholic beliefs held by Luther after his break with Rome will be examined (such as his doctrines of infant baptism and just war theory), as will his radical views of grace, justification by faith, and priesthood. Alongside Luther, the course approaches the teachings of evangelical Anabaptism, considering its views on tolerance, freedom from state oppression, congregation-based authority, infant baptism, the real presence, traditional ordination, and the hierarchical structure of the church. Prerequisite: written consent of department head.

**RLGN 4150** The Religious Thought of St. Thomas Aquinas and the Study of Religion (A) Cr.Hrs.3

(Formerly 020.415) This seminar interprets the religious thought of St. Thomas Aquinas and assesses his significance for the academic study of religion. Prerequisite: written consent of department head.

**RLGN 4160** Religion and Philosophy (C) Cr.Hrs.3

(Formerly 020.416) An examination of the relation between



philosophical and religious thought through in-depth study of a selected thinker or thinkers. Prerequisite: written consent of department head.

**RLGN 4180** Advanced Studies in Islam (B) Cr.Hrs.3 (Formerly 020.418) An in-depth study of selected topics in Islamic philosophy and tradition. Prerequisite: written consent of department head.

**RLGN 4190** Advanced Studies in Hinduism (B) Cr.Hrs.3 (Formerly 020.419) An in-depth study of selected topics in the philosophy, history, literature, and practices of Hinduism. Prerequisite: written consent of department head.

**RLGN 4200** Early Christian Gnosticism (A) Cr.Hrs.3 (Formerly 020.420) This course constitutes a partial introduction to the historical and critical study of earliest Christianity and the writings of the Christian "New Testament." The main emphasis will lie on a study of the New Testament and contemporary writings that show strong mystical and Gnostic-leaning tendencies. Above all, the course will focus on the Gospel of Thomas, the Gospel of John, and other New Testament writings related to the Gospel of John. Prerequisite: written consent of the department head.

**RLGN 4230** Studies in Body History (C) Cr.Hrs.3 (Formerly 020.423) A study in the religious-cultural history of the body, this course explores the multiple meanings given to the body, sexuality and sexual difference in historical and contemporary religious traditions. The course gives particular attention to theories of representation of body, and includes study of both written and performative sources. Prerequisite: written consent of the department head.

**RLGN 4260** Theoretical Approaches: Western Religions (C) Cr.Hrs.3 (Formerly 020.426) This course explores theoretical approaches to the study of western religions, focusing in any given year on one of the following: theories of representation, theories of interpretation, theories of contestation. Prerequisite: written consent of the department head.

**RLGN 4270** Theoretical Approaches: Eastern Religions (C) Cr.Hrs.3 (Formerly 020.427) This course explores theoretical approaches to the study of eastern religions, focusing in any given year on one of the following: theories of representation, theories of interpretation, theories of contestation. Prerequisite: written consent of the department head.

**RLGN 4280** Advanced Studies in Christian Origins (A) Cr.Hrs.3  
With content varying year to year, this course will engage topics pertaining to the first 300 years of Christianity. Theoretical and methodological issues will be considered, as will literary and archaeological data for the study of nascent Christianity. Prerequisite: written consent of instructor or department head.

**RLGN 4290** Advanced Studies in Mysticism (C) Cr.Hrs.3

With religious traditions of focus varying year to year, this course considers current scholarly approaches to the understanding of mysticism and sainthood. It includes study of mystic texts and treatises; the mystic body; mystic communities; ascetic ritual and practice. Prerequisite: written consent of instructor or department head.

**RLGN 4430** Selected Topics in Religion 1 Cr.Hrs.3 (Formerly 020.443) An intensive study of specially selected topics in the field of religion. The subject matter of the course will vary from year to year. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**RLGN 4440** Selected Topics in Religion 2 Cr.Hrs.3 (Formerly 020.444) An intensive study of specially selected topics in the field of religion. The subject matter of the course will vary from year to year. Prerequisite: written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

## 8.27 Department of Sociology

**Head:** Elizabeth Comack

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### 8.27.1 Sociology Program Information,

Sociology examines the patterns of interaction among individuals and the group activity that emerges from such interaction. A basic premise is that social behaviour, and society itself, cannot be fully understood simply by studying the individuals involved. Sociology has a special interest in all those intermediate forms of association between the family and the state which together comprise much of the basis for social solidarity and cohesion. Whether individuals cooperate, compete, or fight is in large measure determined by forces outside themselves, by social forces that encourage or restrain their behaviour.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in SOC 1200 or a grade of "C" or better in both SOC 1211 and SOC 1221. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.



A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

**Honours Program**

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

**Minor (Concentration) Program**

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in SOC 1200 or a grade of "C" or better in both SOC 1211 and SOC 1221.

**8.27.2 Sociology**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR SOCIOLOGY TOTAL: 30 CREDIT HOURS</b>			
SOC 1200 or SOC 1211 and SOC 1221	<ul style="list-style-type: none"> <li>• SOC 2220</li> <li>• SOC 2290</li> <li>• one of SOC 3310, SOC 3330, SOC 3350, SOC 3360, SOC 3380, SOC 3390, SOC 3700</li> <li>• 12 credit hours in Sociology courses numbered at the 2000 or 3000 level</li> </ul>		
<b>ADVANCED MAJOR SOCIOLOGY (NOT CURRENTLY OFFERED) TOTAL: 48 CREDIT HOURS</b>			
SOC 1200 or SOC 1211 and SOC 1221	<ul style="list-style-type: none"> <li>• SOC 2220, SOC 2290, SOC 2330</li> <li>• one of SOC 2390, SOC 3370, SOC 3810, SOC 3890</li> <li>• one of SOC 3310, SOC 3330, SOC 3350, SOC 3360, SOC 3380, SOC 3390, SOC 3700</li> <li>• 6 credit hours in Sociology courses numbered at the 2000 or 3000 level</li> </ul>		18 credit hours in Sociology courses numbered at the 2000 or 3000 level
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
SOC 1200 or SOC 1211 and SOC 1221	12 credit hours in Sociology courses numbered at the 2000 or 3000 level		
<b>HONOURS SINGLE<sup>1,2</sup></b>			
SOC 1200 or SOC 1211 and SOC 1221	<ul style="list-style-type: none"> <li>• SOC 2010, SOC 2220 and SOC 2290</li> <li>• 6 credit hours in Sociology</li> <li>• 12 credit hours in ancillary options</li> </ul>	<ul style="list-style-type: none"> <li>• 6 credit hours from SOC 3310, SOC 3330, SOC 3350, SOC 3360, SOC 3380, SOC 3390, SOC 3700</li> <li>• 12 credit hours in Sociology courses numbered at the 2000 or 3000 level</li> <li>• 12 credit hours in ancillary options</li> </ul>	<ul style="list-style-type: none"> <li>• SOC 4450, SOC 4460, SOC 4560, SOC 4570 and SOC 4580</li> <li>• 6 credit hours in ancillary options</li> </ul>
<b>HONOURS DOUBLE<sup>1,2</sup></b>			
SOC 1200 or SOC 1211 and SOC 1221	<ul style="list-style-type: none"> <li>• SOC 2010, SOC 2220 and SOC 2290</li> </ul>	<ul style="list-style-type: none"> <li>• 6 credit hours from SOC 3310, SOC 3330, SOC 3350, SOC 3360, SOC 3380, SOC 3390,</li> </ul>	<ul style="list-style-type: none"> <li>SOC 4450, SOC 4460, SOC 4560, SOC 4570 and SOC 4580</li> </ul>



	<ul style="list-style-type: none"> <li>• At least 36 credit hours in other Honours field</li> <li>• At least 6 credit hours in ancillary options</li> </ul>	SOC 3700  <ul style="list-style-type: none"> <li>• 3 credit hours in Sociology courses numbered at the 2000 or 3000 level</li> </ul>	
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**NOTES:**

<sup>1</sup> Ancillary options are courses taken from outside the Honours field of study.

<sup>2</sup> Honours courses: SOC 2010 and all 4000 level courses.

**8.27.3 Criminology Program Information,**

Criminology is concerned with the complex social phenomena of crime and criminalization. The criminology program engages students in a systematic study of the nature and extent of crime and criminalization along with the array of agencies and programs designed to prevent, control, and respond to criminal activity over time and place. Attention is given to specific issues related to gender, race, class and crime, youth and crime, violence and victimization, criminal law and procedure, policing and crime prevention, restorative justice, and global criminology. Courses in the criminology program are taught primarily from a sociological perspective, with emphasis placed on research, program development, and policy analysis.

For entry to the Major, the prerequisite is a grade of "C" or better in SOC 1200 or a grade of "C" or better in both SOC 1211 and SOC 1221. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

It is not possible to have a Major in Criminology and a Minor in Sociology.

**Major Program**

**8.27.4 Criminology,**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR CRIMINOLOGY TOTAL: 30 CREDIT HOURS</b>			
SOC 1200 or SOC 1211 and SOC 1221	SOC 2290, SOC 2510, SOC 2610	12 credit hours from SOC 3100, SOC 3310, SOC 3400, SOC 3700, SOC 3710, SOC 3720, SOC 3740, SOC 3750, SOC 3790, SOC 3830, SOC 3850, SOC 3860, SOC 3880	

**8.27.5 Sociology -1000 Level**

**SOC 1200** Introduction to Sociology Cr.Hrs.6 (Formerly 077.120) A systematic introduction to the scientific perspective of sociology. The following areas will be treated: culture, socialization, groups, social stratification, associations, collective behaviour, and urban and political institutions. Students may not hold credit for SOC 1200 (077.120) and any of: SOC 1211 (077.121) or SOC 1221 (077.122) or the former SOC 1201 (077.120).

oral, writing and research skills. It is also designed to facilitate the creation of a cohesive cohort of Honours students through the use of group work and assignments. Prerequisite: written consent of department head.

**SOC 2200** Sociology Through Film Cr.Hrs.3

Using film as a method, this course will be organized around the broad themes of social inequality and social justice. It will engage in a critical sociological analysis of issues such as health and well-being, poverty, genocide and violence, globalization and consumer culture. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**8.27.5 Sociology -2000 Level**

**SOC 2010** Critical Issues in Sociology Cr.Hrs.3 (Formerly 077.201) A form-specific, content variable course especially designed for Honours students. The intent of this course is to develop critical thinking and improve students'

**SOC 2220** Sociological Theoretical Foundations Cr.Hrs.3



(Formerly 077.222) A review of classical sociological theory. The focus will be on the central figures and schools of thought in Sociology. Students may not hold credit for both SOC 2220 (077.222) and SOC 2221 (077.222). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

### **SOC 2260** Cities and Urban Life Cr.Hrs.3

A consideration of the social, cultural and urban processes and their relationship to urban life, with an emphasis on urban experience, sociality, and social inequality. Students may not hold credit for SOC 2260 and any of: SOC 2261 or the former SOC 2270 (077.227) or the former SOC 2271 (077.227). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

### **SOC 2290** Introduction to Research Methods Cr.Hrs.6

(Formerly 077.229) An introduction to quantitative and qualitative scientific methods of investigating social phenomena. The course will include introductions to the assumptions of scientific inquiry, the conceptualization of research problems, basic statistical analysis, and use of a packaged computer program. Students may not hold credit for both SOC 2290 (077.229) and SOC 2291 (077.229). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

### **SOC 2310** Selected Social Problems Cr.Hrs.3

(Formerly 077.231) An examination of one or more contemporary social problems, other than crime and delinquency. Issues that might be addressed include poverty, war, environment, licit and illicit drugs, and death and dying. Consult the Registration Guide or contact the instructor for specific content in any particular academic year. Students may not hold credit for both SOC 2310 (077.231) and SOC 2311 (077.231). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)]. As the course content will vary from year to year, students may take this course more than once for credit.

### **SOC 2320** Canadian Society and Culture Cr.Hrs.3

(Formerly 077.232) A sociological analysis of Canadian institutions with reference to historical, cultural, economic, and political perspectives. Students may not hold credit for both SOC 2320 (077.232) and SOC 2321 (077.232). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

### **SOC 2330** Social Psychology in Sociological Perspective Cr.Hrs.3

(Formerly 077.233) The course examines the interrelations of the individual, the group, and society, with emphasis on interaction as the process that gives form, direction, and meaning to the everyday lives of people. Topics to be discussed may include: self esteem, identity, impression

management, motivation and emotion. Students may not hold credit for both SOC 2330 (077.233) and SOC 2331 (077.233). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

### **SOC 2350** Collective Behaviour Cr.Hrs.3

(Formerly 077.235) The analysis of various forms of collective behaviour, such as crowds, mobs, and social movements. The underlying social conditions, action processes, and consequences of such behaviour will be considered. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

### **SOC 2360** Small Group Interaction Cr.Hrs.3

(Formerly 077.236) The basic sociological concepts and methods used in analyzing and designing small groups such as the family, children's groups, work groups, and friendship groups. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)]. SOC 2330 (077.233) or SOC 2331 (077.233) is recommended.

### **SOC 2370** Ethnic Relations Cr.Hrs.3

(Formerly 077.237) Introduction to the social and social psychological aspects of ethnic relations in Canada. Students may not hold credit for both SOC 2370 (077.237) and SOC 2371 (077.237). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

### **SOC 2380** Sociology of Religion Cr.Hrs.3

(Formerly 077.238) A study of the nature and function of religion as a social institution with emphasis on early theorists, primitive religions, belief systems, and typologies. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

### **SOC 2390** Social Organization Cr.Hrs.3

(Formerly 077.239) The process of ordering social life and the structures that result. Power, conflict, social control, bureaucracy, industrialization, urbanization, and centralization. Students may not hold credit for both SOC 2390 (077.239) and SOC 2391 (077.239). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

### **SOC 2450** Sociology of the Body Cr.Hrs.3

Despite its centrality in social life, the human body is too often taken-for-granted. This course explores a variety of sociological perspectives on the socially constructed nature of bodies to understand how society and social relations both shape and are shaped by the human body. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 2460 The Family Cr.Hrs.3**

(Formerly 077.246) A sociological analysis of the various family arrangements and practices in contemporary societies and their historical roots. An examination of the relationships between family and other institutions in the context of widespread social changes. Students may not hold credit for both SOC 2460 (077.246) and SOC 2461 (077.246). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 2470 Courtship and Marriage Cr.Hrs.3**

(Formerly 077.247) Mate selection, marital interaction, adjustment, changing roles of wives and husbands, with special emphasis on division of labour, power relations, and sexual adjustment in contemporary Western marriage and across cultures. Experimental marriage forms will be examined. Students may not hold credit for both SOC 2470 (077.247) and the former SOC 2471 (077.247). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 2480 Population Problems Cr.Hrs.3**

(Formerly 077.248) A survey of the impact of population growth, contraction, density and distribution on the social, political and economic institutions of developing and developed societies. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 2490 Sociology of Health and Illness Cr.Hrs.3**

(Formerly 077.249) A general introduction to health sociology. The course examines health and illness as social concepts by exploring the personal and structural determinants of health status, and everyday health care practices in which people engage to maintain their health and to manage illness. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 2510 Criminology Cr.Hrs.3**

(Formerly 077.251) A general introduction to theories of deviant behaviour and criminology. The explanation of crime with reference to physical, psychological, and social factors. Students may not hold credit for both SOC 2510 (077.251) and SOC 2511 (077.251). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 2610 Sociology of Criminal Justice and Corrections Cr.Hrs.3**

(Formerly 077.261) The sociological study of the criminal justice system, including the police, the courts, prisons and other correctional agencies. Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head.

**SOC 2620 The Sociology of Aging Cr.Hrs.3**

(Formerly 077.262) An analysis of social and socio-cultural aspects of aging and old age. An orientation to social gerontology and an overview of the situation of the elderly in

Canada. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 2630 Social Change Cr.Hrs.3**

(Formerly 077.263) Major trends of social changes in society, revolutionary and evolutionary change; problems in the measurement and prediction of social change patterns, consequences and problems of future change. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**8.27.5 Sociology -3000 Level****SOC 3100 Practicum in Criminological/Sociological Research Cr.Hrs.6**

This course is designed to develop students' research skills and experience through placement in a criminal justice or other social service agency having a mandate relevant to the study of sociology. The course consists of supervised work within the agency and classroom instruction, culminating in the production of a research report. Enrolment is competitive and special advance permission is required to register. To be considered for admission, students must complete an application form (available from the Department of Sociology website) by the last day of April preceding the Fall term in which the student intends to take the course. Students may not hold credit for both SOC 3100 and the former SOC 3760 (077.376). Prerequisite: written consent of department head.

**SOC 3310 Theorizing Crime, Law, and Social Justice Cr.Hrs.3**

Through investigation of a variety of theoretical approaches, this course fosters an appreciation of the relevance of theorizing for addressing contemporary issues related to crime, law, and social justice. Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head.

**SOC 3330 Origins of Sociological Thought Cr.Hrs.3**

(Formerly 077.333) A systematic introduction to sociological thought from ancient philosophy to the middle of the 19th century. Emphasis is placed on social thought that is to become the foundations of sociological theory. Students may not hold credit for both SOC 3330 (077.333) and SOC 3331 (077.333). Prerequisite: [a grade of "C" or better in SOC 2220 (077.222) or SOC 2221 (077.222)] or written consent of department head.

**SOC 3350 Feminism and Sociological Theory Cr.Hrs.3**

(Formerly 077.335) A critical examination of how gender has been addressed in classical and contemporary sociological theories, with consideration of how sociological inquiry is being transformed through feminist theory and practice. Prerequisite: [a grade of "C" or better in SOC 2220 (077.222) or SOC 2221 (077.222)] or written consent of department head.

**SOC 3360 Theories in Social Psychology Cr.Hrs.3**

(Formerly 077.336) A review of the predominant theoretical perspectives currently utilized in social psychology in relation to contemporary sociological concerns. Prerequisite: [a



grade of "C" or better in SOC 2220 (077.222) or SOC 2221 (077.222)] or written consent of department head.

**SOC 3370 Sociology of Work Cr.Hrs.3**

(Formerly 077.337) A general examination of work behaviour including the historical development of contemporary attitudes about work, an overview of contemporary occupations and professions, characteristics of the professional, occupational choice, social control, and career patterns. Students may not hold credit for both SOC 3370 (077.337) and SOC 3371 (077.337). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 3380 Power, Politics and the Welfare State Cr.Hrs.3**

A critical evaluation of sociological theory and research focusing on power and politics in society. Topics covered include: the dimensions of power (economic, political, ideological), classes and class conflict, political socialization, the origin and nature of the state, and the welfare state. Students may not hold credit for SOC 3380 and any of: SOC 3471 (077.347) or the former SOC 3470 (077.347). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)] or written consent of department head.

**SOC 3390 Contemporary Sociological Theory Cr.Hrs.3**

(Formerly 077.339) A critical examination of contemporary theoretical perspectives and developments in sociology, highlighting the contributions of some major theorists. Course content may vary from year to year depending upon the instructor's interest. Students may not hold credit for both SOC 3390 (077.339) and SOC 3391 (077.339). Prerequisite: [a grade of "C" or better in SOC 2220 (077.222) or SOC 2221 (077.222)] or written consent of department head.

**SOC 3400 Policing and Crime Prevention Cr.Hrs.3**

The sociological study of the organization and operation of the police and the evidence-based prevention of crime. Topics include the history and role and functions of the police, police culture and socialization, strategies and tactics, police deviance and ethics, future policing trends, and methods of crime prevention. Students may not hold credit for both SOC 3400 and SOC 3740 (077.374) with topic "Policing and Crime Prevention." Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head.

**SOC 3450 Sociological Perspectives on the Social Determinants of Health Cr.Hrs.3**

This course will apply a sociological perspective to a critical and theoretically informed study of the social structures influencing personal and population health, including intersections of class, gender, ethnicity, and aging as sources of health inequities. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 3460 Selected Topics Cr.Hrs.3**

(Formerly 077.346) The content of this course will vary from year to year, but will consist of a thorough sociological

treatment of some topic of current interest. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)]. As the course content will vary from year to year, students may take this course more than once for credit.

**SOC 3510 Population Dynamics and Change Cr.Hrs.3**

(Formerly 077.351) Changes in size, composition, and distribution of populations, the dynamics underlying these changes, and their social consequences. Issues and problems in population processes from Canadian and world perspectives will be considered. Students may not hold credit for both SOC 3510 (077.351) and the former SOC 3511 (077.351). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 3540 The Sociology of Health Care Systems Cr.Hrs.3**

(Formerly 077.354) An analysis of the social organization of formal and informal health care, including topics such as professionalism and health care, the nature of therapeutic relationships, institutional vs. community-based care, social reform and health care policy, medicine and the state, and emerging patterns of health care. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)]. SOC 2490 (077.249) is recommended.

**SOC 3580 Media, Culture and Society Cr.Hrs.3**

A consideration of the influence of media on contemporary society, analyzing the production, circulation and consumption of various media forms and their relationship to social life. Students may not hold credit for SOC 3580 and any of: SOC 3581 or the former SOC 3590 (077.359) or the former SOC 3591 (077.359). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)]. SOC 2330 (077.233) or SOC 2331 (077.233) is recommended.

**SOC 3640 Families in Societal Crisis Cr.Hrs.3**

(Formerly 077.364) An analysis of the impact of major social and economic pressure and change on families. The course will focus on institutions, legislation and policies that respond to families and social change. Prerequisite: [a grade of "C" or better in SOC 2460 (077.246) or SOC 2461 (077.246)] or written consent of department head.

**SOC 3660 Sociology of Mental Disorder Cr.Hrs.3**

(Formerly 077.366) A study of the social processes involved in becoming and being mentally ill. Topics such as the public imagery of madness, decision-making rules in psychiatry, life in the mental hospital, and community attitudes toward the mentally ill will be considered. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)]. SOC 2490 (077.249) is recommended.

**SOC 3700 Sociology of Law Cr.Hrs.3**

(Formerly 077.370) The aim of this course is to gain an



understanding of the law-society relationship. Different theoretical approaches will be used to investigate substantive issues that pertain to the role of law in (re)producing social inequalities and its potential for alleviating them. Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head.

**SOC 3710 Sociology of Criminal Careers Cr.Hrs.3**  
(Formerly 077.371) An examination of patterns of criminal behaviour focusing on the sociological aspects of selected offences, the criminal career of the offender, and on societal reaction and legal processing. Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head.

**SOC 3720 The Criminal Law and Its Procedure Cr.Hrs.3**  
(Formerly 077.372) An introduction to the criminal law and an overview of the system by which the criminal law is administered. Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head.

**SOC 3730 Society and Education Cr.Hrs.3**  
(Formerly 077.373) A critical examination of schools at all levels and the challenges they face. Issues such as, curriculum, classroom interaction, gender, race, class and equality of educational opportunities will be explored. The course should be useful to students interested in careers in education and counselling. Students may not hold credit for both SOC 3730 (077.373) and SOC 3731 (077.373). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 3740 Selected Topics in Criminology Cr.Hrs.3**  
(Formerly 077.374) The specific content of this course will vary, but in general it will consist of an examination of a specialized topics relevant to Criminology. Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head. As the course content will vary from year to year, students may take this course more than once for credit.

**SOC 3750 Institutional Responses to Violence in Family and Intimate Relationships Cr.Hrs.3**  
This course will focus on the growing public awareness of the prevalence of interpersonal violence in Canada, examining studies of prevalence from victimization surveys and criminal justice statistics. We examine various criminological and sociological theories of the causes, dynamics and interventions in family and interpersonal violence, legislation and policy and assess these changes from the perspective of victims and accusers. Students may not hold credit for both SOC 3750 and SOC 3460 (077.346) when titled "Interpersonal Violence and Institutional Responses." Prerequisite: a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251).

**SOC 3770 Women, Health and Medicine Cr.Hrs.3**  
(Formerly 077.377) A systematic sociological analysis of women's participation in the health care system, as consumers as well as providers. Historical and contemporary health issues of women are explored, as are women's efforts

to control their experiences and improve their well-being. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)]. SOC 2490 (077.249) is recommended.

**SOC 3790 Women, Crime and Social Justice Cr.Hrs.3**  
(Formerly 077.379) The course examines gender differences in crime, theories of women's crime and the treatment of women offenders and victims by the criminal justice system. Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head.

**SOC 3810 Sociological Perspectives on Gender and Sexuality Cr.Hrs.3**  
(Formerly 077.381) An exploration of the relations between men and women in contemporary society. This course will use historical and cross-cultural standpoints to examine the social construction of gender and sexuality, and the ideological and material structures which (re)produce gender difference. Students may not hold credit for both SOC 3810 (077.381) and SOC 3811 (077.381). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 3820 Qualitative and Historical Methods in Sociology Cr.Hrs.3**  
(Formerly 077.382) An introduction to a variety of data gathering techniques such as participant observation, interviewing, life histories, archival research, document analysis, and the use of case studies. Emphasis will be placed on the use of inductive/deductive procedures in the transformation of raw data into theoretical interpretations. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 3830 Youth, Crime, and Society Cr.Hrs.3**  
(Formerly 077.383) An analysis of issues surrounding the treatment of children and youth in the Canadian criminal justice system. Topics include: historical changes in the role of children and youth; young offender legislation; young offenders and media; and current research on youth crime and its prevention in Canada and other countries. Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head.

**SOC 3838 Ecology and Society Cr.Hrs.3**  
Examines changing patterns of social organizations of civilizations, the resultant social constructions of the human/nature interface, the human social contribution to the global ecological crisis, and possible strategies to create sustainable societies. Consideration of topics such as population, consumption, capitalism, and agricultural practices. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

**SOC 3840 Community and Social Reconstruction Cr.Hrs.3**



(Formerly 077.384) An examination of the changing relationships between the global economic market, the declining resource base of the nation state, and the shift to local control within civil society. Topics may include: the central role of the household in civil society, the informal sector, local initiatives (e.g., co-housing, cooperative, land trusts), and community development. Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

#### **SOC 3850 Restorative Justice Cr.Hrs.3**

(Formerly 077.385) A general introduction to the social theory and practice of restorative justice. Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head.

#### **SOC 3860 Genocide, Crime and Society Cr.Hrs.3**

A critical sociological and criminological examination of comparative genocide studies. Emphasis is placed on the utility of sociological and criminological theoretical frameworks for understanding and explaining genocide, as well as the conceptual and moral failings of criminology and sociology in the face of genocide. Students may not hold credit for both SOC 3860 and SOC 3740 (077.374) when titled "Genocide." Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

#### **SOC 3880 Global Criminology and Criminal Justice Cr.Hrs.3**

This course examines current developments and issues in the field of global criminology and criminal justice. Topics include: crime and globalization; transnational policing and security; world criminal justice systems; global criminal justice policy transfer; and international criminal justice. Students may not hold credit for both SOC 3880 and the former SOC 3780 (077.378). Prerequisite: [a grade of "C" or better in SOC 2510 (077.251) or SOC 2511 (077.251)] or written consent of department head. SOC 2610 (077.261) is strongly recommended.

#### **SOC 3890 Power and Inequality in Comparative Perspective Cr.Hrs.3**

Engaging in a cross-temporal and cross-national investigation, this course critically surveys classical and contemporary debates around the inevitability of social inequality, and explores the ways that inequalities have been reproduced and rationalized, or attenuated and challenged, throughout human history. Key facets and indicators of inequality (such as poverty, homelessness, social exclusion and the distribution of income and wealth) and their relation to central axes of social inequality (class, gender, race/ethnicity and age) are considered. Put simply, this course is concerned with 'who gets what and why?' Students may not hold credit for SOC 3890 and any of: SOC 3871 (077.387) or the former SOC 3870 (077.387). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

### **8.27.5 Sociology -4000 Level**

#### **SOC 4450 Honours Seminar Cr.Hrs.6**

(Formerly 077.445) An intensive discussion of selected sociological problems, culminating in a major Honours thesis. Prerequisite: written consent of department head.

#### **SOC 4460 Advanced Sociological Theory Cr.Hrs.3**

(Formerly 077.446) A critical examination and analysis of sociological theories. Prerequisite: written consent of department head.

#### **SOC 4530 Readings in Sociology Cr.Hrs.3**

(Formerly 077.453) A reading course for undergraduates and pre-Master's in sociology. Prerequisite: written consent of department head.

#### **SOC 4560 Advanced Sociological Theory Cr.Hrs.3**

(Formerly 077.456) A critical examination and analysis of selected sociological theories. Course content may vary from year to year depending upon the instructor's interest. Prerequisite: written consent of department head.

#### **SOC 4570 Quantitative Social Analysis Cr.Hrs.3**

The application of quantitative data analysis in the social sciences, including the following procedures: multiple regression, dummy variable regression, simple analysis of variance and covariance, and an introduction to path analysis. Students may not hold credit for both SOC 4570 and the former SOC 4480 (077.448). Prerequisite: written consent of department head.

#### **SOC 4580 Social Research Methods Cr.Hrs.3**

An introduction to the philosophy of science and logic of scientific method, as well as a survey of research methods and issues. Students are expected to gain a working knowledge of the research process. Students may not hold credit for both SOC 4580 and the former SOC 4470 (077.447). Prerequisite: written consent of department head.

## **8.28 Ukrainian Canadian Heritage Studies Program**

**Program Director:** (Acting) Roman Yereniuk

**Campus Address/General Office:** 207 St. Andrew's College

**Telephone:** 204 474 8907

**Email Address:** [cucs@cc.umanitoba.ca](mailto:cucs@cc.umanitoba.ca)

**Website:** [http://umanitoba.ca/ukrainian\\_canadian\\_studies/](http://umanitoba.ca/ukrainian_canadian_studies/)

### **8.28.1 Program Information,**

Canada is a multicultural nation to which people of Ukrainian origin have made a significant contribution. The study of this community, its past and present, provides a general understanding of the Ukrainian heritage and its role in Canadian society. The program is cross-disciplinary and leads to a Major, Advanced Major, or Minor. In addition to its Canadian focus, the program also examines historical and contemporary issues in Ukraine.



For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

**Major Program**

For entry to the Major, the prerequisite is a grade of "C" or better in six credit hours from List A below. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

**Minor (Concentration) Program**

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in six credit hours from List A below.

**8.28.2 Ukrainian Canadian Heritage Studies**

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
6 credit hours from List A	<ul style="list-style-type: none"> <li>• 12 credit hours from List B taken from each of 3 different departments</li> <li>• 12 credit hours from List C taken from each of 2 different departments</li> </ul>		
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
6 credit hours from List A	<ul style="list-style-type: none"> <li>• 15 credit hours from List B</li> <li>• 27 credit hours from List C</li> </ul>		
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>			
6 credit hours from List A	<ul style="list-style-type: none"> <li>• 6 credit hours from List B taken from each of 2 different departments</li> <li>• 6 credit hours from List C</li> </ul>		

**List A**

**Faculty of Arts**

Economics		
ECON 1200*	Principles of Economics	6
German and Slavic Studies		
UKRN 1270*	Conversational Ukrainian	6
	or	
UKRN 2720	Intermediate Ukrainian	6
	or	
052.264*	Ukrainian 1	6
History		
HIST 1200	An Introduction to the History of Western Civilization (G)	6
HIST 1350	An Introduction to the History of Western Civilization to 1500 (G)	3
HIST 1360	An Introduction to the History of Western Civilization from 1500 (G)	3
HIST 1390	History of Colonial Canada: 1500-1885 (C)	3
HIST 1400	History of the Canadian Nation Since 1867 (C)	3
Political Studies		
POLS 1500	Introduction to Politics	6
	or	
POLS 2040	Introduction to International Relations	6
	or	
POLS 2070	Introduction to Canadian Government	6
	or	
019.151*	Introduction to Contemporary Ideologies	6
	or	
019.153*	Introduction to International Relations	6
	or	
019.156*	Introduction to Canadian Government	6
Religion		



RLGN 1320	Introduction to World Religion	6
	or	
RLGN 1350	The History of Eastern Christianity	6
	or	
020.134*	Religion and Modern Thought	6
Sociology		
SOC 1200	Introduction to Sociology	6
<b>Clayton H. Riddell Faculty of Environment, Earth, and Resources</b>		
Geography		
GEOG 1200	Introductory Geography	6
GEOG 1280	Introduction to Human Geography	3
GEOG 1290	Introduction to Physical Geography	3
<b>School of Art</b>		
FAAH 1030	Introduction to Art 1A and	3
FAAH 1040	Introduction to Art 2A or	3
FAAH 1050	Introduction to Art 1B and	3
FAAH 1060	Introduction to Art 2B	3

\* Indicates course no longer offered.

**List B**

**Faculty of Arts**

German and Slavic Studies		
UKRN 2420*	Ukrainian Canadian Literature	3
UKRN 2430*	Ukrainian Canadian Folklore	3
History		
HIST 3910	The Ukrainians in Canada (C)	3
Religion		
RLGN 2520	Eastern Christianity in North America (A)	3
Ukrainian Canadian Heritage Studies		
UCHS 3100	The Ukrainian Arts in Canada	3

\* Indicates course no longer offered.

**List C**

**Faculty of Arts**

Economics		
ECON 2510	The Economy of Ukraine	3
German and Slavic Studies		
UKRN 2710*	Ukrainian Literature of the 16th to 18th Centuries	3
UKRN 3700*	Church Slavic: Ukrainian Version	3
History		
HIST 2600	Introduction to Ukraine (E)	3
HIST 2610	Making of Modern Ukraine (E)	3
HIST 3030	Issues in Ukrainian History (E)	3
011.255*	The History of Ukraine (E)	6
Political Studies		
POLS 2920*	Government, Politics and Society in Ukraine	6
POLS 3720	Politics, Government and Society in Ukraine	3
Religion		
RLGN 1350	The History of Eastern Christianity (A)	6
RLGN 2530	Eastern Christianity in the Contemporary World (A)	3
RLGN 3570	Major Thinkers in the Eastern Christian Tradition (A)	6
<b>Clayton H. Riddell Faculty of Environment, Earth, and Resources</b>		
Geography		
GEOG 3600*	Geography of Ukraine (A)	3
<b>School of Art</b>		
FAAH 3280	Early Byzantine Art and Architecture	3
FAAH 3290	Later Byzantine Art and Architecture	3

\* Indicates course no longer offered.



### 8.28.3 Ukrainian Canadian Heritage Studies

**UCHS 3100** The Ukrainian Arts in Canada Cr.Hrs.3 (Formerly 155.310) A study of varied aspects of artistic performance and production among Ukrainians in Canada, past and present: music, theatre, dance, cinema, fine arts and architecture. The course will focus on crucial trends and processes and adopt an evaluative approach in its exploration of the above artistic phenomena.

## 8.29 Women's and Gender Studies Program

**Program Coordinator:** Susan Frohlick  
**Program Office:** 114 Isbister Building  
**Telephone:** 204 474 6984  
**E-mail:** [womens\\_gender\\_studies@umanitoba.ca](mailto:womens_gender_studies@umanitoba.ca)  
**Website:** [umanitoba.ca/womens\\_gender\\_studies](http://umanitoba.ca/womens_gender_studies)

### 8.29.1 Program Information

Fundamental questions of equality and social justice are still very much with us, and as a dynamic interdisciplinary program, we explore both current and historical debates about women's experiences, gender relations, and feminism. Courses take diverse theoretical and practical approaches, including feminist cultural studies and studies of popular culture, violence against women, lesbian and queer studies, women in science and technology, gendered violence in urban spaces, sex work and sex workers, feminist geography, indigenous feminisms, masculinity studies, and reconstructing indigenous art histories that recontextualize museum collections and reclaim women's voices and lives.

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs](#).

The following entries contain information which is not contained in [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs](#).

### Major Program

#### 8.29.2 Women's and Gender Studies

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
WOMN 1500 or WOMN 1600	<ul style="list-style-type: none"> <li>• WOMN 2000 and WOMN 3000</li> <li>• 21 credit hours from Women's and Gender Studies courses and/or List A</li> </ul>		
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
WOMN 1500 or WOMN 1600	<ul style="list-style-type: none"> <li>• WOMN 2000 and WOMN 3000</li> <li>• 9 credit hours from Women's and Gender Studies courses</li> <li>• 9 credit hours from courses numbered at or above the 3000 level from Women's and Gender Studies courses and/or List A</li> </ul>		

For entry to the Major, the prerequisite is a grade of "C" or better in each of two 3 credit hour courses in Women's and Gender Studies. It is suggested that students wishing to Major in Women's and Gender Studies take both WOMN 1500 and WOMN 1600. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

### Minor (Concentration) Program

For entry to the Minor (Concentration), the prerequisite is a grade of "C" or better in each of two 3 credit hour courses in Women's and Gender Studies.

### Honours Program

For entry to the Honours program, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs](#).

### Coordinated Programs in Women's and Gender Studies

Students may take courses in the Women's and Gender Studies program at the University of Winnipeg and, where applicable, have these courses credited to their degree at the University of Manitoba. The coordinated program offers students access to more faculty resources, greater course selection and additional library facilities and thus can enrich their Women's and Gender Studies program.

Students are advised to consult with the Women's and Gender Studies coordinator for information on courses available for credit in Women's and Gender Studies.

In addition, special courses under the rubric of selected topics or contemporary issues may be available in various Arts departments, particularly Anthropology, English, Psychology, and Sociology, for Women's and Gender Studies credit in any given academic term.



	• 21 credit hours from Women's and Gender Studies courses and/or List A
<b>MINOR (CONCENTRATION) TOTAL: 18 CREDIT HOURS</b>	
WOMN 1500 or WOMN 1600	• 6 credit hours from Women's and Gender Studies courses • 9 credit hours from Women's and Gender Studies courses and/or List A
<b>HONOURS SINGLE<sup>1,2</sup></b>	
WOMN 1500 and WOMN 1600	• WOMN 2000, WOMN 3000, WOMN 4100, WOMN 4200 • 15 credit hours from Women's and Gender Studies courses • 12 credit hours from courses numbered at or above the 3000 level from Women's and Gender Studies courses and/or List A • 12 credit hours from Women's and Gender Studies courses and/or List A • 24 credit hours in ancillary options
<b>HONOURS DOUBLE<sup>1,2</sup></b>	
WOMN 1500 and WOMN 1600	• WOMN 2000, WOMN 3000, WOMN 4100, WOMN 4200 • 9 credit hours from Women's and Gender Studies courses • 12 credit hours from courses numbered at or above the 3000 level from Women's and Gender Studies courses and/or List A • 36 credit hours in other Honours field • 6 credit hours in ancillary options
<b>NOTES:</b>	
<sup>1</sup> Ancillary options are courses taken from outside the Honours field of study.	
<sup>2</sup> Honours courses: all 4000 level courses.	

**List A**

**Faculty of Arts**

Anthropology

ANTH 3320 Women in Cross-Cultural Perspective (B)	3
ANTH 3321 Femmes, société et cultures (B) (USB)	3
ANTH 3330 Sex and Sexualities (B)	3
ANTH 3350* Anthropology of Sex and Sexualities (B)	3

Economics

ECON 2360* Women in the Canadian Economy	6
ECON 2362 Economics of Gender	3
French, Spanish and Italian	
FREN 2680 Littérature féminine française (B)	3
FREN 3860 Études sur Beauvoir (B)	3
German	
GRMN 1310 Love in German Culture in English Translation	3
GRMN 3280 Sex, Gender and Cultural Politics in the German-Speaking World	3
GRMN 3282 Sex, Gender and Cultural Politics in the German-Speaking World in English Translation	3

History

HIST 2400 History of Human Rights and Social Justice in the Modern World (G,M)	3
HIST 2710 Women in History (G)	6
HIST 3570 History of Women in Canada (C)	6
HIST 3760 Problems in American History 1	3
Acceptable for credit only when the topic is "Gender and Sexuality in 20th Century America."	
HIST 3810 The Family, Love and Marriage in Western Society, 1500-1800 (E)	6
HIST 3811 Famille, amour et mariage dans la société occidentale, 1500-1800 (E)	6
HIST 3820 The Women's Movement, 1850 to the Present (G)	6
HIST 4060 Gender History in Canada (C)	6

Native Studies

NATV 2430 Indigenous Women's Stories	3
NATV 3360 Aboriginal Women of Canada	3



NATV 3380 Cultural Constructions of Gender in Canadian Aboriginal Societies	3
Philosophy	
PHIL 3220 Feminist Philosophy	3
Political Studies	
POLS 3100 Gender and Politics in Canada	3
POLS 3240 Feminist Political Theory	3
Psychology	
PSYC 2390 Psychology of Women	3
PSYC 2400 The Psychology of Sex Differences	3
Religion	
RLGN 2680 Women and Religion 1	3
RLGN 2690 Women and Religion 2	3
Slavic Studies	
RUSN Russian Women's Writing from the 1950s to the 2350* Present Day	3
RUSN 3980 Women and Russian Literature	3
UKRN 3970 Women and Ukrainian Literature	3
Sociology	
SOC 2460 The Family	3
SOC 2461 La famille (USB)	3
SOC 2470 Courtship and Marriage	3
SOC 2471* Les fréquentations et le mariage (USB)	3
SOC 3770 Women, Health and Medicine	3
SOC 3790 Women, Crime and Social Justice	3
SOC 3810 Sociological Perspectives on Gender and Sexuality	3
SOC 3811 Sociologie de la sexualité et des rôles sexuels (USB)	3
<b>School of Art</b>	
FAAH 2110 Women and Art	3
FAAH 4090 Seminar on Contemporary Issues in Art Acceptable for credit only when the topic is "Women Artists."	3
<b>Clayton H. Riddell Faculty of Environment, Earth, and Resources</b>	
GEOG 4280 Gender and the Human Environment	3
<b>Marcel A. Desautels Faculty of Music</b>	
MUSC 4130 History of Women in Music	3
<b>Faculty of Nursing</b>	
NURS 3330 Women and Health	3

\* Indicates course no longer offered.

NOTE: List A courses are identified in Aurora Student with the course attribute of "Women's Studies Requirement."

both WOMN 1600 and the former WOMN 1540 (156.154).

### 8.29.3 Women's and Gender Studies -1000

#### Level

**WOMN 1500** Introduction to Women's and Gender Studies in the Humanities Cr.Hrs.3

Examination of the central concerns of women and gender in the Humanities. A focus on representation, voice, knowledge, and subjectivity. Students may not hold credit for both WOMN 1500 and the former WOMN 1530 (156.153).

**WOMN 1600** Introduction to Women's and Gender Studies in the Social Sciences Cr.Hrs.3

Examination of women's historical and contemporary roles in the economy, family, and society from the perspective of the social sciences. Introduction of feminist theories, with emphasis on the role of gender. Topics covered focus on the social conditions of women's lives: work, health, violence and organizing for change. Students may not hold credit for

### 8.29.3 Women's and Gender Studies -2000

#### Level

**WOMN 2000** Feminist Thought Cr.Hrs.3

Survey of the varieties of historical and contemporary feminist ideas. Students may not hold credit for both WOMN 2000 and the former WOMN 2520 (156.252). Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies courses] or written consent of the Women's and Gender Studies coordinator.

**WOMN 2500** Race, Class and Sexuality Cr.Hrs.3

(Formerly 156.250) An exploration of the various ways race, class, and sexual orientation impact on women's lives and identities. Focus is on how racism, classism and heterosexism are produced and reproduced both within and outside of the feminist movement. Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies courses] or written consent of the



Women's and Gender Studies coordinator.

**WOMN 2510 Women and Education Cr.Hrs.3**  
(Formerly 156.251) An examination of school knowledge and organization as they affect the experiences of girls and women as students and teachers. Includes an exploration of the interaction between schooling and women's work as mothers, and between education and femininity.

**WOMN 2530 Writing Women's Lives Cr.Hrs.3**  
(Formerly 156.253) Examination of the ways that traditional scripts for women have been rewritten in literature and film. Topics include coming-of-age, madness, utopia, motherhood, and romantic love as represented in fairytales, autobiographies, documentaries, contemporary novels, and Hollywood films.

**WOMN 2540 Special Topics in Women's Studies Cr.Hrs.3**  
(Formerly 156.254) Course content will vary according to the needs and interests of students and instructors. Consult the Women's and Gender Studies Program office for information as to specific topics offered. As the course content will vary from year to year, students may take this course more than once for credit.

**WOMN 2560 Women, Science and Technology Cr.Hrs.3**  
(Formerly 156.256) An overview of women's historical and contemporary participation in science, issues in science and math education, feminist critiques and theories on science and gender, and the impact of technology on women's lives.

**WOMN 2570 Soap Operas, Harlequins, and Talk Shows Cr.Hrs.3**  
(Formerly 156.257) This course looks at gender-specific forms of entertainment that have been identified with women. Using postmodern feminist approaches to media, the course looks at how these forms are scripted for TV and cheap paperbacks, and at how the media constructs women as a marketing category for cultural and product consumption. Students may not hold credit for both WOMN 2570 (156.257) and WOMN 2540 (156.254) with the topic "Soaps, Harlequins, Talk Shows."

**WOMN 2600 Sex, Gender, Space and Place Cr.Hrs.3**  
An examination of how we use places and spaces in our everyday lives to produce and maintain social differences of gender, sexuality, race, class, and citizenship. Drawing on perspectives from feminist geography and history, this course explores ideas about places (for example, homes) and spaces (for example, regions), as well as historical claims that women belong in place but men should control space. Students may not hold credit for both WOMN 2600 and WOMN 2540 (156.254) with the topic "Sex, Gender, Space and Place."

### 8.29.3 Women's and Gender Studies -3000 Level

**WOMN 3000 Interdisciplinary Research in Women's and Gender Studies Cr.Hrs.3**  
An introduction to the approaches scholars use to challenge

the dominant theories of knowledge and the major methodologies used to produce it. The course examines the influence of gender theory and feminism on the research questions we ask, the types of materials we use, and the methods we employ. Students may not hold credit for both WOMN 3000 and the former WOMN 3580 (156.358). Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies courses] or written consent of the Women's and Gender Studies coordinator.

**WOMN 3100 Sex Work in Contemporary Canadian Culture Cr.Hrs.3**  
This course examines cultural linkages between femininity and prostitution in the context of contemporary Canadian culture. The course begins by considering historical cultural and feminist discourses about sex work and sex workers. Keeping in mind that the actual exchange of sexual services for money is currently legal in Canada, course discussions will interrogate enduring representations of sex work/ers. The course also examines some prostitution-related legislation, ideological and "real world" linkages between violence and prostitution, and ongoing activism that reinforce or resist negative representations and the violent realities of sex work/ers in Canada today. Students may not hold credit for both WOMN 3100 and WOMN 2540 with the topic "Sex Work in Contemporary Canadian Culture." Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies courses] or written consent of the Women's and Gender Studies coordinator.

**WOMN 3330 Sex and Sexualities Cr.Hrs.3**  
Comparative approaches to the study of human sexuality and the diversity of sexual expression and identification from a feminist and cross-cultural ethnographic perspective. Sex and sexualities are examined as social and cultural constructions, experiences, discourses, identities, and practices located in specific local contexts and shaped by wider social processes including colonialism and globalization. This course is also offered as ANTH 3330. Students may not hold credit for WOMN 3330 and any of: ANTH 3330 or the former ANTH 3350 or WOMN 3500 (156.350) with the topic "Anthropology of Sex and Sexualities." Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies or Anthropology courses] or written permission of instructor.

**WOMN 3500 Selected Topics in Women's Studies Cr.Hrs.3**  
(Formerly 156.350) Course in which content varies from year to year according to needs and interests of students and instructors. Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies courses] or written consent of the Women's and Gender Studies coordinator. As the course content will vary from year to year, students may take this course more than once for credit.

**WOMN 3510 International Feminisms Cr.Hrs.3**  
(Formerly 156.351) An examination of the social, political, economic and cultural realities facing women around the world, with emphasis on "Third World" women. A major focus will be on feminist struggles for change, international organizing and transnational solidarity efforts. Prerequisite:



[a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies courses] or written consent of the Women's and Gender Studies coordinator.

**WOMN 3530** Readings in Women's Studies Cr.Hrs.6  
(Formerly 156.353) Directed readings in a range of Women's Studies literature. This is an independent study course. Prerequisite: written consent of instructor and Women's and Gender Studies coordinator. As the course content will vary from year to year, students may take this course more than once for credit.

**WOMN 3540** Readings in Women's Studies Cr.Hrs.3  
(Formerly 156.354) Directed readings in a range of Women's Studies literature. This is an independent study course. Prerequisite: written consent of instructor and Women's and Gender Studies coordinator. As the course content will vary from year to year, students may take this course more than once for credit.

**WOMN 3550** Feminist Community Organizing: Theories and Practices Cr.Hrs.3  
(Formerly 156.355) Overview of organizing efforts and techniques, community issues and strategies that women have developed in North American and especially Canadian communities. Focus is on a synthesis of thought and action, theory and practise. Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies courses] or written consent of the Women's and Gender Studies coordinator.

**WOMN 3560** Feminist Perspectives on Violence Against Women Cr.Hrs.3  
(Formerly 156.356) An overview of feminist research and theories on violence against women as an integral component of our social structure, and on issues of social change to alleviate the problem. Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies courses] or written consent of the Women's and Gender Studies coordinator.

**WOMN 3600** Good Girls/Bad Girls Cr.Hrs.3  
(Formerly 156.360) This course challenges the good girl/bad girl binary as a way of defining the complex reality of women's lives by closely examining regimes of mental and physical hygiene. The course also considers how the media use this binary to sensationalize women like Princess Diana, Madonna, Amy Fisher, and Monica Lewinsky. Students may not hold credit for both WOMN 3600 (156.360) and WOMN 3500 (156.350) with the topic "Good Girls/Bad Girls." Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies courses] or written consent of the Women's and Gender Studies coordinator.

**WOMN 3620** Masculinities Cr.Hrs.3  
An introduction to the key debates in masculinity studies from a feminist perspective. Considering the idea of "hegemonic masculinity" and the practice of creating a typology of masculinity, this course examines the changing forms of masculinity as a political and cultural category, using historical examples from the 19th century and the 1970s and considers the influence of feminist theories on men's engagement with masculinity in North America. Students may not hold credit for both WOMN 3620 and WOMN 3500 (156.350) with the topic "Masculinities."

Prerequisite: [a grade of "C" or better in a minimum of three credit hours of Women's and Gender Studies courses] or written consent of the Women's and Gender Studies coordinator.

### 8.29.3 Women's and Gender Studies -4000 Level

**WOMN 4100** Honours Thesis Cr.Hrs.6  
(Formerly 156.410) The Thesis presents the results of an independent research project supervised by a faculty member. Prerequisite: written consent of the Women's and Gender Studies coordinator.

**WOMN 4120** Practicum in Feminist Organizing Cr.Hrs.6  
(Formerly 156.412) Between September and March, the student will complete a minimum of 80 hours of unpaid independent work in a feminist or woman-centered organization and meet regularly with the instructor and other practicum students. Students will reflect critically on the work experience in course assignments. Prerequisite: [a grade of "C" or better in at least 24 credit hours in Women's and Gender Studies courses] and written consent of the Women's and Gender Studies coordinator.

**WOMN 4200** Seminar in Women's and Gender Studies Cr.Hrs.3  
An advanced seminar on a contemporary theme in Women's and Gender Studies. The theme will vary from year to year in accordance with the research interests of the instructor and new developments in the field. Student presentations and discussions will be emphasized. Students may not hold credit for both WOMN 4200 and the former WOMN 4110 (156.411). Prerequisite: [a grade of "C" or better in WOMN 2000 or the former WOMN 2520 (156.252)] and written consent of the Women's and Gender Studies coordinator.

## Section 9: Courses and Programs Offered by Other Faculties and Schools for Credit in Arts

### Courses

All degree credit courses offered by other Faculties or Schools at the University of Manitoba are acceptable for credit in Arts (excludes Pass/Fail courses) subject to the Faculty of Arts overall degree requirements. Such courses taken prior to admission to Arts will be included on transfer and will also be used in determining eligibility for admission. For details see [Section 5.3](#). For see the departmental listing in this Calendar.

### Programs

Also listed below are eight programs which can be used by Faculty of Arts students to satisfy the Major or Minor requirement for graduation with a Bachelor of Arts degree. These programs are:



History of Art General Major	Mathematics Advanced Major
History of Art Minor	Mathematics Minor
Minor in Management	Music Minor
Mathematics General Major	

Effective September 2009 Arts students may complete Minor programs offered by other Faculties/Schools not listed above providing the Minor program consists of a minimum of 18 credit hours and all other degree requirements are satisfied.

## 9.1 School of Art: History of Art

**Program Coordinator:** L. Stirling  
**Program Office:** 349 University College  
**Telephone:** 204 474 7357

### 9.1.1 Program Information

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs](#). **NOTE:** It is strongly recommended that students majoring in Art History have competence in a second language.

### 9.1.2 History of Art

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
FAAH 1030, FAAH 1040	<ul style="list-style-type: none"> <li>• FA 1990</li> <li>• 12 credit hours from List A</li> <li>• FAAH 3260 or FAAH 3270</li> <li>• FA 3440</li> <li>• 9 credit hours from either List A or List B</li> </ul>		
<b>MINOR TOTAL: 18 CREDIT HOURS</b>			
FAAH 1030, FAAH 1040	<ul style="list-style-type: none"> <li>• FA 1990</li> <li>• 12 credit hours from either List A or List B</li> </ul>		

#### Introductory Courses

FAAH 1030	Introduction to Art 1A	3
FAAH 1040	Introduction to Art 2A	3
FAAH 1050*	Introduction to Art 1B	3
FAAH 1060*	Introduction to Art 2B	3
FA 1990	First Year Field Trip	0
FA 3440	Field Trip	0

#### List A

#### Faculty of Arts

Classics		
CLAS 2670	Greek Art and Archaeology	3
CLAS 2680	Roman Art and Archaeology	3

#### School of Art

Art History		
FAAH 1100	Survey of Asian Art	3
FAAH 2060	Medieval to Early Renaissance Art and Architecture	3
FAAH 2070	Renaissance to Baroque Art and Architecture	3
FAAH 2080	Modern to Contemporary Art	3
FAAH 2090	Art of the North American Aboriginal Peoples	3
FAAH 2100*	Survey of Asian Art	3
FAAH 2110	Women and Art	3

#### List B

#### School of Art

FA 2620*	Writing About Art	3
FAAH 2910	Field Studies in Art History 1	3



FAAH 2920	Field Studies in Art History 2	6
FAAH 3130	Topics in Medieval Art and Architecture	3
FAAH 3140	Topics in Renaissance and Baroque Art and Architecture	3
FAAH 3150	Topics in 18th and 19th Century Art	3
FAAH 3160	Topics in 20th Century Art	3
FAAH 3170*	Contemporary Art	3
FAAH 3180	History of Photography	3
FAAH 3190	History of Ceramics	3
FAAH 3200	Art in New Media	3
FAAH 3202	Contemporary Art History	3
FAAH 3210	Introduction to the Theory and Criticism of Art	3
FAAH 3220	Topics in Aboriginal Art	3
FAAH 3230	Chinese Art and Architecture	3
FAAH 3240	Japanese Art and Architecture	3
FAAH 3250	Topics in Art History	3
FAAH 3260	Canadian Art and Architecture to World War II	3
FAAH 3270	Canadian Art Since World War II	3
FAAH 3280	Early Byzantine Art and Architecture	3
FAAH 3290	Later Byzantine Art and Architecture	3
FAAH 3430	Inuit Art	3
FAAH 3590	Islamic Art and Architecture	3
FAAH 3780	Twentieth Century American Art Until 1950	3
FAAH 3910	Field Studies in Art History 3	3
FAAH 3920	Field Studies in Art History 4	3
FAAH 4060	Seminar on the Theory and Criticism of Art	3
FAAH 4070	Seminar in Art History 1	3
FAAH 4080	Seminar in Art History 2	3
FAAH 4090	Seminar on Contemporary Issues in Art	3
FAAH 4710	Directed Study 1	3
FAAH 4720	Directed Study 2	3

\* Indicates course no longer offered.

## 9.2 Faculty of Management/I.H. Asper School of Business

All courses offered by the Asper School of Business in the Faculty of Management are acceptable for credit in the Faculty of Arts. Management courses may be taken by Faculty of Arts students subject to availability of space and satisfaction of prerequisites.

### Minor in Management

For entry to the Minor, the prerequisite is a grade of "C" or better in the first 6 hours of Management courses. The Management Minor will consist of any 18 credit hours in the Faculty of Management/Asper School of Business courses.

### 9.3.2 Music

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>MINOR<sup>1</sup> (OPTION 1) TOTAL: 18 CREDIT HOURS</b>			
MUSC 1280 and MUSC 1290	12 credit hours of Music courses from List A <sup>2</sup>		
<b>MINOR<sup>1</sup> (OPTION 2) TOTAL: 18 CREDIT HOURS</b>			

## 9.3 Marcel A. Desautels Faculty of Music

### 9.3.1 Program Information

For entry, continuation and graduation requirements for the General Degree, Advanced Degree, and Honours Degree, see [Section 3: Basic Faculty Regulations for the B.A. General, Advanced and Honours Degree Programs.](#)

### Minor Program

For entry to the Minor, the prerequisite is a grade of "C" or better in each of MUSC 1280 and MUSC 1290 or a grade of "C" or better in each of MUSC 1110 and MUSC 1120.

MUSC 1110 and MUSC 1120	12 credit hours of Music courses from List A <sup>2</sup>	
<b>NOTES:</b>		
<sup>1</sup> At most, 12 credit hours at the 1000 level may be used toward the Major or Minor.		
<sup>2</sup> Students who elect ensemble courses from List A are required to complete all three courses.		

**NOTE:** Completion of a Minor in Music does not satisfy the "teachable" Minor that is required for admission to the After Degree B. Ed. program.

### List A

Students are responsible for ensuring that all prerequisites have been met.



MUSC 1050	The Well-Tempered Concert-Goer
MUSC 1070	Introduction to the History of Music
MUSC 1080	History of Music 2
MUSC 1110	Music Theory 1
MUSC 1120	Music Theory 2
MUSC 1280	Musical Style and Structure 1
MUSC 1290	Musical Style and Structure 2
MUSC 2070	History of Music 3
MUSC 2080	History of Music 4
MUSC 2110	Music Theory 3
MUSC 2120	Music Theory 4
MUSC 2460	Conducting
MUSC 3020	History and Performance of Jazz
MUSC 3030	History of Music in Worship
MUSC 3050	Research Methods
MUSC 3090	Introduction to Ethnomusicology
MUSC 3100	Opera Repertoire
MUSC 3110	Chamber Music Repertoire
MUSC 3230	Acoustics of Music
MUSC 3600	Conducting
MUSC 3640	Orchestration
MUSC 3820	Topics in Music
MUSC 3830	Topics in Music
MUSC 3840	Topics in Music
MUSC 3850	Topics in Music

MUSC 3960	Music of the Twentieth Century 1
MUSC 3970	Music of the Twentieth Century 2
MUSC 4060	History of Music 6
MUSC 4070	History of Music 7
MUSC 4130	History of Women in Music
MUSC 4150	Choral Repertoire
033.383*	Music Theory 5
033.386*	Topics in Music
033.387*	Topics in Music

\* No longer offered

### 9.4 Faculty of Science

All minors offered by the Faculty of Science can be used as satisfying the Faculty of Arts requirement of a Minor (Concentration); (for details, see the Faculty of Science chapter of this Calendar). In addition, Arts students may also choose a General or Advanced Major, or a Minor in Mathematics as described below.

The Mathematics General Major offered at the Université de Saint-Boniface differs from the one offered at the Fort Garry Campus. For a complete description, consult the Université de Saint-Boniface's Calendar.

#### 9.4.1 Mathematics

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>GENERAL MAJOR TOTAL: 30 CREDIT HOURS</b>			
<ul style="list-style-type: none"> <li>• one of MATH 1500, MATH 1510, MATH 1520</li> <li>• one of MATH 1700, MATH 1710; or MATH 1690</li> <li>• MATH 1200</li> <li>• one of MATH 1300, MATH 1310</li> </ul>	MATH 2300, MATH 2720 <sup>2</sup> , MATH 2730 <sup>2</sup>	9 credit hours from MATH 2400, MATH 2450, MATH 2500, MATH 2552, MATH 2600 <sup>1</sup> , MATH 2800, or any 3000 or 4000 level Mathematics course	
<b>ADVANCED MAJOR TOTAL: 48 CREDIT HOURS</b>			
<ul style="list-style-type: none"> <li>• one of MATH 1500, MATH 1510, MATH 1520</li> <li>• one of MATH 1700, MATH 1710; or MATH 1690</li> <li>• one of MATH 1300, MATH 1310</li> </ul>	MATH 2300, MATH 2600 <sup>1</sup> or MATH 2800, MATH 2720 <sup>2</sup> and MATH 2730 <sup>2</sup>	<ul style="list-style-type: none"> <li>• MATH 3300, MATH 3740</li> <li>• 18 credit hours from the following list of which at least 3 credit hours must be at the 3000 or 4000 level: MATH 2202, MATH 2400, MATH 2450, MATH 2500, MATH 2552, MATH 2600<sup>1</sup>, MATH 2800, or any 3000 or 4000 level Mathematics course</li> </ul>	
<b>MINOR TOTAL: 18 CREDIT HOURS</b>			
<ul style="list-style-type: none"> <li>• one of MATH 1300, MATH 1310</li> <li>• one of MATH 1500, MATH 1510, MATH 1520</li> <li>• one of MATH 1690, MATH 1700, MATH 1710</li> <li>• plus a minimum of 9 credit hours from MATH 1200 and 2000 and (or) 3000 level Mathematics courses</li> </ul>			
<p><b>NOTES:</b>  <sup>1</sup> MATH 2600 has a prerequisite of COMP 1010.  <sup>2</sup> MATH 2750 may be substituted for MATH 2720 and MATH 2730.                      For entry to either Major in Mathematics, the prerequisite is a grade of "C+" or better in six hours of Mathematics courses taken.                      For entry to the Minor in Mathematics, the prerequisite is a grade of "C" or better in six hours of Mathematics courses taken.                      A detailed listing of courses in the Department of Mathematics is available in the <i>Calendar</i> entries of the Faculty of Science.</p>			



Equivalent Honours courses may sometimes be substituted for the courses listed above. In this way, a Major degree can be considerably strengthened. For more detailed advice students should talk to a faculty member in the department.

### 9.5 Interfaculty Option in Aging

The Interfaculty Option in Aging Concentration is available to students in all B.A. degree programs.

This Concentration is offered by: Arts; Clayton H. Riddell Faculty of Environment, Earth, and Resources; Human

Ecology; Nursing; Kinesiology and Recreation Management; and Social Work. To complete the Concentration, Arts students will need to complete each of the following: a) The Social Aspects of Aging, HMEC 2650 or REC 2650 or SWRK 2650; and b) Health and Physical Aspects of Aging, NURS 2610 or KIN 2610; and c) an additional twelve credit hours from the following courses:

#### Faculty of Arts

English, Film, and Theatre

FILM 3420	Film Theory	3
Psychology		
PSYC 2360	Brain and Behaviour	3
PSYC 2370	Developmental Psychology from Adolescence to Old Age	3
PSYC 3350	Behaviour Neuroscience	3
PSYC 3460	Abnormal Psychology	3
PSYC 3490	Individual Differences	3
PSYC 3610	Memory	3
PSYC 4420	Neuroimaging: Imaging and Thoughts	3
PSYC 4430	Vision: Perception and Action	3
PSYC 4566	Psychology of Health and Aging	3
Religion		
RLGN 1410	Death and Concepts of the Future (C)	3
Sociology		
SOC 2490	Sociology of Health and Illness	3
SOC 2620	Sociology of Aging	3
SOC 3510	Population Dynamics and Change	3
SOC 3540	The Sociology of Health Care Systems	3

#### Clayton H. Riddell Faculty of Environment, Earth, and Resources

Geography

GEOG 4710*	Geography of the Elderly and Aging	3
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\* Indicates course no longer offered.

Upon completion of these requirements, the Option in Aging will be recorded as a concentration on the student's official transcript. For information concerning the option, interested students are directed to faculty general offices.



## School of Dental Hygiene

**Program Director:** Joanna Asadoorian

**Campus Address/General Office:** D212 Dental Building,  
Bannatyne Campus

**Telephone:** (204) 789 3683

**Fax:** (204) 789 3948

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[dent\\_hygiene@umanitoba.ca](mailto:dent_hygiene@umanitoba.ca)

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[umanitoba.ca/faculties/dentalhygiene](http://umanitoba.ca/faculties/dentalhygiene)

**Academic Staff:**

Please refer to the School website:

[umanitoba.ca/faculties/dentalhygiene](http://umanitoba.ca/faculties/dentalhygiene)

## Chapter Contents

### SECTION 1: Degree Programs Offered

1.1 Programs

1.2 The Profession of Dental Hygiene

### SECTION 2: Admission Requirements

2.1 Diploma in Dental Hygiene

## SECTION 1: Degree Programs Offered

### 1.1. Programs,

Program/Degree	Years to Complete	Total Credit Hours
Diploma in Dental Hygiene	Minimum time to graduation: Three years via Direct Entry or University 1 (or satisfaction of prerequisites), plus two years.	101
Bachelor of Science in Dental Hygiene, Degree Completion Program	Minimum time to graduation: Dependent upon prior education (i.e. completion of a pre-professional year [Univ 1] prior to entry into the Diploma in Dental Hygiene program). Upon admission to the B.Sc.D.H. program part-time students would be expected to complete the program within two to three (2-3) years.	120*

\* See [section 4.2](#) for details on how this credit hour requirement is satisfied.

### 1.2 The Profession of Dental Hygiene,

Dental hygiene is a self regulated health service profession concerned primarily with the prevention of oral disease and the promotion of optimum oral health. As a licensed professional, the dental hygienist's scope of practice is regulated by provincial legislation. The dental hygiene process of care consists of five components: assessment, dental hygiene diagnosis, planning, implementation, and evaluation. Current practice settings include: Private dental practice, community health centres, institutions (e.g.,

2.2 Bachelor of Science in Dental Hygiene, Degree Completion Program

### SECTION 3: Faculty Academic Regulations

3.1 Diploma in Dental Hygiene

3.2 Bachelor of Science in Dental Hygiene, Degree Completion Program

### SECTION 4: Program and Graduation Requirements

4.1 Diploma in Dental Hygiene

4.2 Bachelor of Science in Dental Hygiene, Degree Completion Program

### SECTION 5:

5.1 Diploma in Dental Hygiene

5.2 Bachelor of Science in Dental Hygiene, Degree Completion Program

hospitals, long-term care facilities), primary health care centres, home care and other outreach programs, educational institutions (e.g., universities, community colleges), the military, research, and industry. Dental hygienists acquire competence through instruction in basic sciences, oral health sciences, the humanities and clinical practice. Through more than 600 hours of a competency-based clinical curriculum, students are prepared to meet the needs of a broad range of population groups.



The School of Dental Hygiene Mission Statement: In a dynamic environment of excellence and progressive learning, the University of Manitoba, School of Dental Hygiene prepares future dental hygienists to enhance the health and well being of the public through oral health promotion, disease prevention and therapeutic means; and to be active members of the global health care community.

### Practice Requirements

After successful completion of the National Dental Hygiene Certification Board Examination, in Manitoba, graduates must apply to the College of Dental Hygienists of Manitoba for a licence to practice as a dental hygienist. Dental hygienists must fulfil the requirements of the respective provincial regulatory authorities licensing bodies. The minimum educational credential for licensure in the province of Manitoba is the Diploma in Dental Hygiene. Licensed dental hygienists may continue their education by completing a Bachelor of Science Degree in Dental Hygiene.

## SECTION 2: Admission Requirements

### 2.1 Diploma in Dental Hygiene,

The following is a summary of admission requirements. All admission requirements, as well as application deadline dates and forms, are included in an applicant information bulletin that is available from the [Admissions Office, Enrolment Services](#), 424 University Centre; this information is also posted on the university's website.

#### 2.1.a Direct Entry

##### General Direct Entry/University of Manitoba Admission Requirements

Manitoba high school graduation, with five full credits at the Grade 12 level, in courses designated S (Specialized), G (General), or U (Dual Credit –University), with a minimum of three of these credits in S or U courses.

##### Specific Requirements for the School of Dental Hygiene

General Requirements as above, plus a minimum 85% average over the following, with no less than 60% in each course:

- a. English 40S
- b. TWO of Mathematics 40S (either Pre-Calculus, recommended, or Applied), Biology 40S or Chemistry 40S

**Notes:** Candidates must meet the specific subject requirements, minimum grades, average or other requirements as listed for the program. Should demand exceed available positions, higher averages may be required to be competitive (higher than 85%). Only Canadian Citizens and Permanent Residents will be considered for admission.

Selection criteria: 100 per cent based on academic standing.

It is recommended that all applicants attend an orientation session. Orientation for dental hygiene takes place at the [School of Dental Hygiene, Bannatyne Campus](#).

#### 2.1. b Advanced Entry/Transfer Applicants

The following is a summary of the admission requirements for Advanced Entry. Applicants to this category must successfully complete the following courses prior to application. Course are normally completed within University 1, however, equivalent academic courses completed at recognized universities elsewhere will be considered (Transfer Applicants).

ENGL 1310

CHEM 1300 and CHEM 1310 or CHEM 1320

PSYC 1200

BIOL 1410 and BIOL 1412

STAT 1000

6 credit hours of electives (Sociology is strongly recommended) for a total of 30 credit hours.

#### Other Requirements

Minimum GPA for consideration: 3.00 with no grade less than C, with the exception of English which requires the minimum grade of C+. Admission is competitive.

Selection criteria: 100 per cent based on academic standing for the Regular Applicant Category. Interview and Letters of Reference are considered within the Special Applicant Category. Preference will be given to Manitobans in the Special Applicant Category and on the alternate list.

It is recommended that all applicants attend an orientation session. Orientation for dental hygiene takes place at the [School of Dental Hygiene, Bannatyne Campus](#).

#### 2.2 Bachelor of Science in Dental Hygiene, Degree Completion Program,

The program will be available to dental hygiene diploma graduates of the University of Manitoba or other accredited dental hygiene educational institutions wishing to complete requirements for the baccalaureate degree on a full-time or part-time basis. Transfer of credit for courses completed at other institutions will be possible through appropriate University procedures. The School will evaluate credits from other institutions on an individual basis. The following is a summary of the admission requirements. All admission requirements, as well as application deadline dates and forms, are included in an applicant information bulletin that is



available from the [Admissions Office, Enrolment Services](#), 424 University Centre; this information is also posted on the university's website.

**Admission to the degree completion program requires of students that:**

- They must possess a Diploma in Dental Hygiene from either a university or community college program accredited by either the Commission on

Dental Accreditation of Canada or the American Dental Association's Commission on Dental Accreditation.

- They must possess the National Dental Hygiene Certification Board (NDHCB) Certificate
- They must hold current licensure to practice dental hygiene in Canada and be eligible for licensure to practice in Manitoba.
- They must possess all the pre-requisite course requirements prior to admission (see prerequisite requirements, options A & B below)

Prerequisite Requirements		
<b>Option A</b>		
This option is for those graduate of accredited dental hygiene programs who completed a proscribed pre-professional year of university studies prior to entry into their dental hygiene program		
Required Prerequisites (minimum C grade in each course)	Research methods (REHB 2450; PSYC 2250) or equivalent	3 credit hours
	Basic Statistical Analysis (STAT 1000; PSYC 2260) or equivalent	3 credit hours
	Total	6 credit hours
<b>Option B</b>		
This option is for dental hygienists who are graduates of accredited two year programs which did not require a pre-professional year of university studies		
Required Prerequisites (minimum C grade in each course)	Research Methods (REHB 2450) or equivalent	3 credit hours
	Basic Statistical Analysis (STAT 1000) or equivalent	3 credit hours
	Free choice electives	15 credit hours
	TOTAL	21 credit hours

The required minimum grade for specified prerequisite courses including electives is a C. There is a **required minimum overall grade point average of 3.0 (B) in the candidates Diploma in Dental Hygiene or Associated Degree Program.**

Selection is competitive. In the event of a surplus number of applicants, selection will be based on the grade point average (GPA) over the most recently completed 60 credit hours of study completed at the accredited post secondary level.

**SECTION 3: Faculty Academic Regulations**

All students are asked to note that some academic policies and regulations are under review and are subject to change. Please check the Web Calendar at [umanitoba.ca](http://umanitoba.ca) for updated information.

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. In addition, the School of Dental Hygiene has regulations and requirements, published below, that apply specifically to its students.

Direct Entry students are to be aware that as they will be registered in courses outside of the school of Dental Hygiene (non HYG courses), they may be subject to the rules and regulations of the faculty/school in which those courses reside (primarily the Faculties of Arts and Science). Direct Entry students are encouraged to become familiar to the rules and regulations of these faculties/schools. Please contact the School of Dental Hygiene for further information.

**3.1 Diploma in Dental Hygiene,  
3.1.a Immunization and Bloodborne Diseases Policy**

Note: This policy is under review. Please consult the School of Dental Hygiene for further information.

All Diploma students enrolled in dental hygiene must be immunized against the following diseases: diphtheria/tetanus, polio, rubella, measles, mumps, chicken pox and hepatitis B. Students must be tested for tuberculosis if a suspected exposure occurs. Students who cannot be immunized because of allergies or other reasons must provide a physician's certificate to verify these reasons.

Before the first day of classes all students must complete the University of Manitoba Immunization Record Form, provided by the dental hygiene office. Immunization records must be signed by a physician or nurse verifying that all immunizations are up-to-date.

Direct Entry students are responsible to have all immunization requirements in place prior to their entrance into their second year (first clinical year) of the program. Further information will be provided upon admission to the School.

All students are responsible for updating their immunizations as needed.

Students will not be permitted to attend clinics until all immunization requirements are up-to-date.

**3.1.b Criminal Record/Child Abuse Registry**



An adult criminal record and child abuse registry self-declaration will be required of all applicants at the time of application. A formal Adult Criminal Record Check (including vulnerable sector screening) and a formal Child Abuse Registry Check is required at the time of registration, and annually thereafter keeping in accordance with existing policies of other health, education and social service programs at the University of Manitoba.

Direct Entry students will be required to provide these documents upon admission to the program and prior to October 1 of that year.

Failure to provide these documents may impact on registration and a student's ability to progress in the Dental Hygiene program.

### 3.1.c CPR Certification

Accepted candidates will be required to show proof of CPR certification by October 15 of each year. The CPR Certification level required by the School of Dental Hygiene is: Health Career Provider (HCP CPR Level C). This certification must be maintained on a yearly basis up to the date of graduation.

Direct Entry students will not need to provide this certification in year 1 of their program; they will be expected to complete this requirement by October 15<sup>th</sup> of their first clinical year.

### 3.1.d Instruments, Computer, Textbooks and Uniforms

Students entering the School of Dental Hygiene will be expected to own or purchase a laptop computer that is compliant with University computer standards (see Bookstore - Computers on Campus for annual listing) and Vital Source Technologies software requirements. The expenditure of a computer may range approximately from \$1000 to \$4000 and the cost of Vital Source Technologies software over the two clinical years of the program is approximately \$2000USD.\* These costs replace former textbook expenditures.

Students are responsible for clinic educational fees\*, the purchase of some instruments ('kit')\* and other sundry items as may be necessary or required. Over the two clinical years of the program, the cost of such instruments/fees has been approximately \$14,700 (see fee schedule). Specific items and instruments purchased by students are their property. \*\* The School is unable to accept returns of any student computer software, clinic fees, instruments or other items should a student leave the school for whatever reason and upon graduation.

\*Direct entry students will not be expected to purchase a laptop computer, Vital Source Software, or be charged clinic education, or instrument/kit fees until the start of their second year of the program (first clinical year).

\*\* Under review and subject to change. Please contact the school for further information.

### 3.1.e Examinations and Promotions

**The following may not apply to Direct Entry students during their first year of the program, but will come into effect once they are registered in years two and three of the program (once registered in HYG courses as described in Section 4). Further clarification will be communicated to Direct Entry Students upon admission to the School of Dental Hygiene.**

Regular attendance in all courses as well as a satisfactory record completed during the term will be required to qualify a student to sit for the annual or other grading examination.

To obtain standing in any year, a student must attain a minimum Term Grade Point Average (GPA) of 2.0 in all courses of that year. If a student is registered for less than 100% of the courses listed for the year, a minimum Term GPA of a 2.0 must also be obtained.

A student who has obtained a grade of "F" in more than two subjects or who fails to obtain a Term GPA of 2.0 will be regarded as having failed the year and will be required to repeat the work of that year in a succeeding annual session. The student must re-apply for admission to the school if the failed year is the first year.

No student will be allowed to register for the full work of any one year who has a condition remaining from a previous year.

Students are prohibited from interviewing individual members of the school with reference to examination standing at any time prior to the posting of official grade lists.

For details on final examinations, see the [Chapter General Academic Regulations and Requirements](#) of this Calendar.

For appeals process, see the [Chapter General Academic Regulations and Requirements](#).

For a description of the grading system, see the [Chapter General Academic Regulations and Requirements](#).

### 3.1.f Supplemental Examinations

**The following may not apply to Direct Entry students during their first year of the program, but will come into effect once they are registered in years two and three of the program (once registered in HYG courses as described in Section 4). Further clarification will be communicated to Direct Entry Students upon admission to the School of Dental Hygiene.**

A student who has failed in not more than two subjects at the regular final examinations of any year, or who fails to obtain a Term GPA of 2.0 in courses of the year, may upon application and at the discretion of the Dental Faculty Council be awarded the privilege of one or two supplemental examination(s).



The Faculty Council will specify in which subjects the student may write supplemental examinations. The passing grade in supplemental examinations is "C" in each subject.

A student must maintain a minimum Term GPA of 2.0 each year in order to be eligible for supplemental privileges.

A student who, having exercised supplemental privileges, has not more than one condition remaining, may in the ensuing annual session, be allowed to take only that one course in the Dental Hygiene program. If the condition is removed in that session, the student will be regarded as having completed the year to which the condition applied.

Supplemental examinations are held prior to the opening of the session in the autumn, and application must be made to the [Registrars Office](#) no later than those deadline dates listed in this Calendar.

### 3.1.g Challenge for Credit

**The following may not apply to Direct Entry students during their first year of the program, but will come into effect once they are registered in years two and three of the program (once registered in HYG courses as described in Section 4). Further clarification will be communicated to Direct Entry Students upon admission to the School of Dental Hygiene.**

There are a limited number of courses which may be challenged for credit. Information on the specific courses involved may be obtained from the director of the School of Dental Hygiene. Requests for course challenge must be received prior to the commencement of the term in which the course will be offered.

### 3.1.h Honours and Awards

Dean's Honours: awarded to students in each year of the dental hygiene Diploma program who have achieved a minimum sessional (fall & winter term combined) G.P.A. of 3.8. In addition, only students registered for 80 per cent or more of the normal course load during a regular session are eligible for Honours Standing.

A student who fails in one or more subjects, or who fails the year at the regular final examination, is not eligible to obtain Honours Standing or to receive any awards for the work of that year.

A student repeating a year's work is not eligible to obtain Honours Standing or to receive any awards for the work of that year.

The following policy applies to the eligibility of part-time students for academic awards:

A student who is carrying less than 80 per cent of the normal course load for the year is only eligible for an award in the individual subjects taken by him/her.

A student who is repeating a course may not be eligible for an award in that subject.

### 3.1.i Voluntary Withdrawal

Students intending to withdraw from a portion or all of their courses must report immediately in person or in writing to the Director's Office. Please note: **Computer Software, Clinic and Kit fees and/or kit items are non-refundable.** See also the chapter, on [General Academic Regulations and Requirements](#).

Students who withdraw from the School of Dental Hygiene without notice will be considered to have terminated their connection with the school. If a subsequent application for registration is approved, they will be required to conform to the rules and regulations, fee schedules, sequence of courses, etc., in effect at the time of such subsequent application.

In cases where a student is obliged to withdraw after the final date of withdrawal published in the *Calendar* because of ill health or other sufficient reasons, their cases will be considered by the Director of the School.

### 3.1.j E-Mail Accounts

All students are expected to have an e-mail account with the University of Manitoba and check it regularly. The School of Dental Hygiene does not support communications with its students through external e-mail addresses.

### 3.1.k Registration exceptions

Diploma students who have a failing grade/s registered against them and/or have other outstanding academic matters (i.e. deferred or supplemental examinations, modified program, etc.) in regards to the previous academic session will not be allowed to register using Aurora Student. Students who fall into this category should contact the student advisor for further information. A student advisor is available in D028 Dental Building or by calling (204) 789-3484.

## 3.2 Bachelor of Science in Dental Hygiene, Degree Completion Program,

### 3.2.a Academic Progress

A minimum Degree Grade Point Average of 2.0 must be maintained in the Bachelor of Science in Dental Hygiene for clear standing. A grade of C is considered a passing grade for all courses applied towards degree requirements. Students who do not maintain a minimum GPA of 2.0 may be required to withdraw from the program.

### 3.2.b Licensure

Students in the Bachelor of Science in Dental Hygiene program must maintain professional licensure during their registration at the School of Dental Hygiene. Students



should also note that licensure with the College of Dental Hygienists' of Manitoba may be required for registration within certain core courses (example: teaching practicum) of the program. Students are responsible for all fees associated with the maintenance of current licensure as well as application for licensure within Manitoba as may be required.

### 3.2.c Criminal Record/Child Abuse Registry

An adult criminal record and child abuse registry self-declaration will be required of all applicants at the time of application. A formal Adult Criminal Record Check (including vulnerable sector screening) and a formal Child Abuse Registry Check is required at the time of registration, and annually thereafter keeping in accordance with existing policies of other health, education and social service programs at the University of Manitoba.

### 3.2.d Writing Skills

Once in the program, students who do not exhibit ability to communicate in writing may be required to seek remediation in writing skills.

### 3.2.e Transfer of Credit

The School may consider University credits earned **outside** of dental hygiene diploma programs or earned as part of an **incomplete** degree for transfer credit. If a student earned credit for a required course in the baccalaureate program as part of a diploma in dental hygiene or as part of another degree, an alternative course must be submitted for consideration.

### 3.2.f Residence Requirements

Baccalaureate Degree-Completion Program students are required to complete at least 30 credit hours of University of Manitoba courses of the total 120 credits for the degree, with the minimum grade of "C" in each course.

### 3.2.g Clinic Attire

Students in the B.Sc.Dental Hygiene program must maintain appropriate clinic attire when participating in clinical activities. Students will be required to purchase clinic uniforms as specified at the time of registration.

### 3.2.h Program Length/Registration

Students in the Bachelor of Science in Dental Hygiene, Degree Completion Program should note that after initial registration, the length of time to complete the B.Sc.D.H. program is variable dependent upon whether courses are taken full-time or part-time. Part-time students would be expected to complete the program within two to three (2-3) years. Students should be aware that the B.Sc.D.H. program tuition fee does not include tuition fees assessed against registration in courses administered outside of the Dental Hygiene Program (non HYGN courses). Further information

on fees may be obtained from the University of Manitoba's web-site: [umanitoba.ca](http://umanitoba.ca)

### 3.2.i Voluntary Withdrawal

Students intending to withdraw from a portion or all of their courses must report immediately in person or in writing to the Director's Office. Please note that all program tuition fees for the Bachelor of Science in Dental Hygiene program are non-refundable. See the chapter, on General Academic Regulations and Requirements for further information on voluntary withdrawal.

Students who withdraw from the School of Dental Hygiene without notice will be considered to have terminated their connection with the school. If a subsequent application for registration is approved, they will be required to conform to the rules and regulations, fee schedules, sequence of courses, etc., in effect at the time of such subsequent application.

In cases where a student is obliged to withdraw after the final date of withdrawal published in the *Calendar* because of ill health or other sufficient reasons, their cases will be considered by the Director of the School.

### 3.2.j E-Mail Accounts

All students are expected to have an e-mail account with the University of Manitoba and check it regularly. The School of Dental Hygiene does not support communications with its students through external e-mail addresses.

### 3.2.k Registration exceptions

Bachelor of Science Students who will be taking courses outside of the School of Dental Hygiene will be required to follow registration regulations/restrictions governed by the faculty in which those courses reside. Normal course repeat rules and restrictions will apply. Students in the B.Sc. program will also be responsible to ensure that they have verified their initial access time for registration; consulted with an advisor and/or obtained required program approval for outside courses as necessary; checked for timetable updates for all external courses; registered and assessed their fees after registration in all courses. A student advisor is available in D028 Dental Building or by calling (204) 789-3484.

## SECTION 4: Program and Graduation Requirements

### 4.1 Diploma in Dental Hygiene,

For students admitted as of Spring, 2012 and forward. Students admitted prior to 2012 should refer to the version of the University of Manitoba Undergraduate Calendar in effect on the date of their admission for clarification of program/graduation requirements. Further information may also be obtained from the School of Dental Hygiene.



**First Year**

**(Direct Entry)**

ENGL 1310	Literary Topics 1	3
PSYC 1200	Introduction to Psychology	6
BIOL 1410 and	Anatomy of the Human Body	3
BIOL 1412	Physiology of the Human Body	3
STAT 1000	Basic Statistical Analysis 1	3
6 credit hours of electives	Electives (Sociology is strongly recommended)	6
CHEM 1300 and	University 1 Chemistry: Structure and Modeling in Chemistry	3
CHEM 1310	University 1 Chemistry: An Introduction to Physical Chemistry	3
Or	Or	
CHEM 1320	University 1 Chemistry: An Introduction to Organic Chemistry	6
	Total credit hours	30

**Second Year/First  
Clinical Year (Year 1  
Advanced Entry)**

Course No.	Credit Hours	
HYGN 1232	Oral and Dental Anatomy	3
HYGN 1234	Preclinical Dental Hygiene	2
HYGN 1236	Dental Hygiene Theory and Practice I	4
HYGN 1238	Dental Hygiene Clinical Practice I	3
HYGN 1242	Dental Hygiene Theory and Practice II	4
HYGN 1262	Dental Radiology	3
HYGN 1270	Biology of the Head and Neck	3
HYGN 1280	Microbiology and Infectious Diseases	3
HYGN 1292	Dental Hygiene Preclinical Restorative Techniques	2
HYGN 1320	Dental Materials	2
HYGN 1340	Communications	2
HYGN 1352	Community Health I	3
HYGN 1360	Periodontology I	2
	Total credit hours	36

**Third Year/  
Second Clinical Year**

HYGN 2100	Dental Hygiene Portfolio*	2
HYGN 2280	Pharmacology	2
HYGN 2300	Pathology	3
HYGN 2312	Dental Hygiene Clinical Practice II	4
HYGN 2314	Dental Hygiene Theory and Practice III	4
HYGN 2316	Dental Hygiene Clinical Practice III	4
HYGN 2318	Dental Hygiene Theory and Practice IV	5
HYGN 2340	Periodontology II	2
HYGN 2350	Biology of Oral Tissues	2
HYGN 2362	Community Health II	3
HYGN 2370	Nutrition in Dentistry	2
HYGN 2380	Pain Management	2
	Total credit hours	35

\* Registration in HYGN 2100, Dental Hygiene Portfolio will also occur within the first clinical year of the Dental Hygiene program. However, no grade will be assigned and it will not be factored into GPA calculations.

**4.2 Bachelor of Science in Dental Hygiene, Degree**

Completion Program,  
Accredited dental hygiene programs in Canada and the U.S. have been traditionally offered as either stand-alone two year programs with direct entry from high school, or as two-year programs requiring a pre-professional year of studies prior to admission into the professional program. In order to provide access to a broad range of potential degree completion students, two options have been developed.

**Option A.** This option is for those graduates of accredited 3 year dental hygiene programs, or equivalent, or those who have completed a proscribed pre-professional year prior to entry into their dental hygiene program.

Dental hygienists from the University of Manitoba who graduated between 1993 and 2007 must complete 21 credit hours



Dental hygienists from the University of Manitoba who graduated after 2007 must complete 19 credit hours

Graduates of other (non-University of Manitoba) dental hygiene programs who completed a pre-professional year prior to entry into their dental hygiene program, may be granted up to 15 credit hours from the pre-professional year and 75 credit hours from the 2-year dental hygiene program towards their degree. These graduates will be required to complete 30 hours of University of Manitoba credits in order to complete the degree and satisfy the residency requirement.

**Option B.** Dental hygienists who are graduates of accredited two year programs without the pre-professional year, must complete the 21 credit hours as described below plus 24

credit hours of free-choice electives. This requirement applies to graduates from the University of Manitoba (prior to 1993) as well as other accredited two-year dental hygiene programs in North America with no pre-professional year. As in Option A, the residency requirement of 30 credit hours for those non-University of Manitoba graduates will be upheld.

**University of Manitoba Graduates**

Students with diplomas in dental hygiene from the University of Manitoba will complete 19 credit hours if they graduated after 2007 and 21 credit hours if they graduated between 1993 and 2007. Dental hygienists who graduated from the University before 1993 will complete 24 credit hours of electives in addition to 21 dental hygiene baccalaureate credit hours (total 45).

Year of Graduation (U of M)	Pre-Professional Year	Total Dental Hygiene Program Credit Hours Granted	Option	Credit Hours for BScDH Completion	Total BScDH Credit Hours
After 2007	Yes	1 + 2 years or 3 years  (30 + 71 = 101 Credit Hours)	Option A	1 year  (19 Credit Hours)	120 credits hours
Between 1993 and 2007	Yes	1 + 2 Years  (30 + 69 = 99 Credit Hours)	Option A	1 year  (21 credit hours)	120 credit hours
Before 1993	No	2 Years  75 Credit Hours	Option B	2 years  (45 credit hours)	120 credit hours

**Graduates of Other Accredited North American Dental Hygiene Programs**

**\* Residency Requirement**

Pre - Professional Year	Total Dental Hygiene Program Credit Hours Granted	Option	Credit Hours for BScDH Completion	Total BScDH Credit Hours
Yes	Pre-Prof. Year (accept 15 credit hours)  + 2 years DH  (75 Credit Hours) = 90 Cr. Hrs.	Option A	1 year  *(30 credit hours)	120 credits hours
No	2 Years  75 Credit Hours	Option B	2 years  *(45 credit hours)	120 credit hours



**Degree Completion Curriculum**

**Dental Hygiene Core** (Minimum 12)

**Mandatory Courses** (2)

HYGN 2380 Pain Management (2)

**Elective Courses**

HYGN 4410 Dental Hygiene Practice Management and Leadership (3)

HYGN 4460 Community Health Independent Study (3)

HYGN 4470 Community Health Independent Study 2 (3)

HYGN 4490 Current Issues in Dental Hygiene (3)

HYGN 4520 Advanced Independent Study (3)

HYGN 4530 Teaching Practicum (3)

HYGN 4540 Advanced Teaching Practicum (3)

HYGN 4550 Advanced Independent Study II (3)

**Potential Electives - Not part of the Core Program (up to 21 Cr. Hrs)**

HYGN 4500 Advanced Oral Pathology (UBC) (3)

HYGN 4510 Microbiology & Immunology (3)

HYGN 4472 Assessment & Treatment Planning for Advanced Periodontal Disease (3)

**Courses approved as Potential Electives outside of the School of Dental Hygiene**

NURS 1260 Human Growth & Development (3)

PHIL 1290 Critical Thinking (3)

SOC 2490 Sociology of health & Illness (3)

SOC 3540 Sociology of Health Care Systems (3)

HNSC 1210 Nutrition for Health & Changing Lifestyles (3)

PHIL 2740 Ethics & Biomedicine (3)

**SECTION 5: Direct Entry (Year 1)-Required**

**ENGL 1310** Literary Topics 1 Cr.Hrs.3

(Formerly 004.131) Topics relating to literature and culture will vary yearly. See the Class Schedule for a list of current topics. English 40S or the former English 300 are strongly recommended, but English 40G or the former 301 or 305 will also be accepted. As the course content will vary from year to year, students may take this course more than once for credit.

**PSYC 1200** Introduction to Psychology Cr.Hrs.6

(Formerly 017.120) Basic concepts and principles of individual behaviour are examined, particularly those of human development, normal and abnormal behaviour, social psychology, learning, perception, and psychological measurement. Students may not hold credit for PSYC 1200 (017.120) and any of: PSYC 1211 (017.121) or PSYC 1221 (017.122) or the former PSYC 1201 (017.120). Prerequisite for all other courses in Psychology.

**BIOL 1410** Anatomy of the Human Body Cr.Hrs.3

(Lab Required) (Formerly ZOO 1320, 022.132) Microanatomy and gross anatomy discussed including changes occurring from conception to old age. Although this course may be used as an elective in an Arts or Science program, it may not be used to meet a program requirement of an Honours or Major program in the Biological Sciences. No prerequisite. High school Biology strongly recommended.

**BIOL 1412** Physiology of the Human Body Cr.Hrs.3

(Lab Required) (Formerly ZOO 1330, 022.133) Function of all systems discussed with homeostatic regulatory mechanisms as foundation themes. Although this course may be used as an elective in an Arts or Science program, it may not be used to meet a program requirement of an Honours or Major program in the Biological Sciences. Not available to students who have previously obtained credit in, or are currently registered in both of BIOL 2410 (or equivalent - ZOO 2530, BIOL 2411, ZOO 2531, 022.253) and BIOL 2420 (or equivalent - ZOO 2540, BIOL 2421, ZOO 2541, 022.254). Prerequisite: BIOL 1410 (ZOO 1320, 022.132) (C); or one of BIOL 1030, BIOL 1031, or the former 071.125 (C). This prerequisite is waived for students in the Baccalaureate Program for Registered Nurses.

**STAT 1000** Basic Statistical Analysis 1 Cr.Hrs.3

(Formerly 005.100) An introduction to the basic principles of statistics and procedures used for data analysis. Topics to be covered include: gathering data, displaying and summarizing data, examining relationships between variables, sampling distributions, estimation and significance tests, inference for means. Not to be held with STAT 1001, STAT 2220 (005.222). Prerequisite: Any grade 12 or 40S Mathematics, or equivalent.

**CHEM 1300** University 1 Chemistry: Structure and Modelling in Chemistry Cr.Hrs.3

(Lab Required) (Formerly 002.130) Atomic and molecular models and their applications to chemistry, including a discussion of solid, liquid, and gaseous states, and of mixtures. Not to be held with CHEM 1301. Prerequisites: Applied Mathematics 40S or Pre-calculus Mathematics 40S, or the former Mathematics 40S (300); and Chemistry 40S (or equivalent) or CHEM 0900 (002.090) (P), or a minimum grade of "B" in CHEM 1000 or CHEM 1001 (002.100).



**CHEM 1310** University 1 Chemistry: An Introduction to Physical Chemistry Cr.Hrs.3  
(Lab Required) (Formerly 002.131) Thermochemistry, chemical thermodynamics, and chemical kinetics.  
Prerequisite: CHEM 1300 or CHEM 1301 (002.130) (C).

**CHEM 1320** University 1 Chemistry: An Introduction to Organic Chemistry Cr.Hrs.3  
(Lab Required) (Formerly 002.132) Structures, properties and reactions of organic molecules. Not to be held with CHEM 2210 or CHEM 2211 (002.221) Prerequisite: CHEM 1300 or CHEM 1301 (002.130) (C).

### SECTION 5: Dental Hygiene -1000 Level

**HYGN 1232** Oral and Dental Anatomy Cr.Hrs.3  
This course consists of a self-study CD and laboratory work dealing with the normal development, morphology, structure, and functions of the dentition and related structures.  
Corequisites: HYGN 1234 and HYGN 1236.

**HYGN 1234** Preclinical Dental Hygiene Cr.Hrs.2  
This introductory course teaches the necessary dental hygiene skills in laboratory and preclinical settings. Students are introduced to foundational assessment and implementation skills necessary to begin client care at the novice level. Corequisites: HYGN 1232 and HYGN 1236.

**HYGN 1236** Dental Hygiene Theory and Practice 1 Cr.Hrs.4  
This introductory course provides the necessary foundational knowledge requisite for preclinical experience and early client care. It includes the theory and principles underlying the practice of dental hygiene based on the four phases of the Dental Hygiene Process of Care and the concept of Professionalism. Corequisites: HYGN 1232 and HYGN 1234.

**HYGN 1238** Dental Hygiene Clinical Practice I Cr.Hrs.3  
The course focus is on the cognitive, psychomotor and affective knowledge and skills requisite to the dental hygiene process of care. It includes the principles underlying the practice of dental hygiene and facilitates the development of a self-directed and self-aware professional. Prerequisites: HYGN 1234 and HYGN 1236. Corequisite: HYGN 1242.

**HYGN 1242** Dental Hygiene Theory and Practice II Cr.Hrs.4  
A continuation of foundational knowledge requisite for clinical care on less complicated clients that includes the theory and principles underlying the practice of dental hygiene based on the Dental Hygiene Process of Care. Prerequisites: HYGN 1234 and HYGN 1236. Corequisite: HYGN 1238.

**HYGN 1262** Dental Radiology Cr.Hrs.3  
An introduction to the production of x-rays, radiation biology, radiation protection, imaging materials, imaging techniques, recognition of radiographic landmarks and structures, and quality control of radiographs. Corequisites: HYGN 1234 and HYGN 1238.

**HYGN 1270** Biology of the Head and Neck Cr.Hrs.3  
(Formerly 070.127) Anatomy, physiology, histology and embryology of the head and neck.

**HYGN 1280** Microbiology and Infectious Diseases Cr.Hrs.3  
(Formerly 070.128) A study of different types of

microorganisms. Infectious diseases will be discussed in terms of reservoirs, transmission, pathogenesis, treatment and prevention. Emphasis will be given to common communicable diseases, the oral microflora and its role in disease and health.

**HYGN 1292** Dental Hygiene Preclinical Restorative Techniques Cr.Hrs.2  
A study of the principles and techniques of restorative dentistry. Introduction information on restorative dentistry specialties.

**HYGN 1320** Dental Materials Cr.Hrs.2  
(Formerly 070.132) A study of the properties of materials used in the oral environment for restorative, prosthetic, orthodontic and preventive purposes. Laboratory demonstrations and exercises are designed to demonstrate the correct preparation and handling of dental materials.

**HYGN 1340** Communications Cr.Hrs.2  
(Formerly 070.134) This course provides an introduction to basic principles of communication in relation to everyday and professional interactions. The students are sensitized to the process of communication, its complexities and its related dynamics. Particular attention is given to enabling students to develop effective professional communication skills that have the potential to promote client compliance and harmonious working relationships.

**HYGN 1352** Community Health I Cr.Hrs.3  
An introductory, participatory course in community oral health promotion intended to inspire a sense of community responsibility in students as health professionals responding to community needs through classroom teaching, interviews and debates.

**HYGN 1360** Periodontology I Cr.Hrs.2  
(Formerly 070.136) A study of the normal tissues of the periodontium, and an introduction to periodontal diseases, their etiology, epidemiology and treatment, especially as these relate to dental hygiene practice. A critical analysis of periodontal cases is included.

### SECTION 5: Dental Hygiene -2000 Level

**HYGN 2100** Dental Hygiene Portfolio Cr.Hrs.2  
This two credit hour course houses the evaluation component of the programmatic portfolio of student competencies that all students commence at enrolment and complete prior to graduation.

**HYGN 2280** Pharmacology Cr.Hrs.2  
(Formerly 070.228) Drugs used in clinical practice; a general knowledge of drugs by groups with emphasis on agents such as local anesthetics, analgesics, and antibiotics used extensively in the practice of dentistry.

**HYGN 2300** Pathology Cr.Hrs.3  
(Formerly 070.230) A study of the principles of general and oral pathology involving pathologic mechanisms, disorders of physiologic systems, and pathologic conditions and diseases affecting oral and para-oral structures.

**HYGN 2312** Dental Hygiene Clinical Practice II Cr.Hrs.4  
This competency-based clinical course amalgamates theoretical knowledge and clinical skills in both general



clinical and community based clinical settings. Students provide care to clients with moderate oral health needs. This course is evaluated on a pass/fail basis. Prerequisites: HYGN 1238 and HYGN 1242. Corequisite: HYGN 2314.

**HYGN 2314** Dental Hygiene Theory and Practice

III Cr.Hrs.4

Learning, motivation, and behaviour modification theories are applied to oral health promotion. Dental hygiene care plans are developed using a human needs model and process of care. Ethics, jurisprudence and practice standards are discussed. Prerequisites: HYGN 1238 and HYGN 1242. Corequisite: HYGN 2312.

**HYGN 2316** Dental Hygiene Clinical Practice III Cr.Hrs.4

This course advances the student's clinical dental hygiene skills to a level of minimal competency. Students provide dental hygiene care to clients with high oral health needs to facilitate their attainment of optimal oral health. This course is evaluated on a pass/fail basis. Prerequisites: HYGN 2312 and HYGN 2314. Corequisite: HYGN 2318.

**HYGN 2318** Dental Hygiene Theory and Practice IV Cr.Hrs.5

The oral health needs of persons with disabilities and the development of dental hygiene care plans to address those needs are discussed as well as issues of access to dental hygiene care, employment, quality assurance, and professional growth and development. Prerequisites: HYGN 2312 and HYGN 2314. Corequisite: HYGN 2316.

**HYGN 2340** Periodontology II Cr.Hrs.2

(Formerly 070.234) Continuation of the study of etiology, diagnosis and treatment of periodontal disease.

**HYGN 2350** Biology of Oral Tissues Cr.Hrs.2

(Formerly 070.235) Consideration of physiology of the oral environment and its microflora in relation to health, dental caries and periodontal diseases.

**HYGN 2362** Community Health II Cr.Hrs.3

Student abilities to deliver community oral health education/promotion programs, with attention given to barriers and strategies used to meet the unique needs of target populations less likely to have optimal oral health are further developed. Prerequisite: HYGN 1352.

**HYGN 2370** Nutrition in Dentistry Cr.Hrs.2

(Formerly 070.237) A physiological, psychological, and social insight into the principles of nutrition and their relation to preventive dental practice.

**HYGN 2380** Pain Management Cr.Hrs.2

(Formerly 070.238) This course is designed to enhance the dental hygiene student's knowledge of the mechanisms of pain control through the administration of topical and local anesthetic agents. Emphasis will be placed on the pharmacology of dental anesthetic agents and their interaction with the client's current conditions and medications.

## SECTION 5: Dental Hygiene -4000 Level

**HYGN 4460** Community Health Independent Study Cr.Hrs.3

This course is a practicum and/or independent study course focusing on the design and/or implementation and evaluation of the health promotion program process in; the field.

Students may choose to host an oral health awareness raising event for the public, provide community-based oral health promotion activity at a selected site, develop a small-scale oral health promotion program for an underserved population group or a similar community-based project.

**HYGN 4470** Community Health Independent Study

II Cr.Hrs.3

This course is a continuation of HYGN 4460 (Community Health Independent Study) and provides a further opportunity for the student to build on the previous independent study course or focus on the design and/or implementation and evaluation of an additional health promotion program. In either case, students may choose from oral health awareness raising event for the public, community-based oral health promotion activity, small-scale oral health promotion programming or similar community oral health project.

**HYGN 4500** Advanced Oral Pathology Cr.Hrs.3

A web-based CD-ROM distance education course designed to present the clinical and pathobiologic aspects of diseases that affect oral and maxillofacial tissues or present with significant oral manifestations of systemic diseases. This course is presented in conjunction with the University of Manitoba and the University of British Columbia.

**HYGN 4510** Microbiology and Immunology Cr.Hrs.3

This Web CT course is offered in conjunction with the University of British Columbia. Microbiological and immunological concepts that are the scientific basis for understanding human response in health and disease will be explored. This course builds on knowledge acquired from dental hygiene entry-to-practice level education and dental hygiene practice.

**HYGN 4520** Advanced Independent Study I Cr.Hrs.3

This course will enable the degree-completion student to explore issues or areas of interest in dental hygiene with the mentorship of a dental hygiene faculty member. Dependent upon the extent of the project, students may enroll in either three or six hours of study.

**HYGN 4530** Teaching Practicum Cr.Hrs.3

This course provides students with a seminar course in clinical teaching methodologies and the opportunity to practice teach within an undergraduate dental hygiene program under the supervision and mentorship of dental hygiene faculty members.

**HYGN 4540** Advanced Teaching Practicum Cr.Hrs.3

This course is a continuation of HYGN 4530 (Teaching Practicum) and provides the opportunity to extend the practice teaching experience into a second term, thus strengthening the individual's skills as a dental hygiene educator. This experience will occur under the supervision and mentorship of dental hygiene faculty members.

**HYGN 4550** Advanced Independent Study II Cr.Hrs.3

This course is a continuation of HYGN 4520 (Advanced Independent Study) and provides the opportunity for the student to pursue a more complex project which cannot be completed within the first course. Students will have selected their project topic in HYGN 4520 and will continue their exploration and write-up of this topic with the guidance of a dental hygiene faculty mentor.



## Faculty of Dentistry

**Dean:** Anthony M. Iacopino

**Associate Dean(s):** Associate Dean (Academic): Douglas Brothwell; Associate Dean (Research): Raj Bhullar; Associate Dean (Clinical): Mel Sawyer

**Campus Address/General Office:** D113 Dentistry Building, Bannatyne Campus

**Telephone:** (204) 789 3631

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**Email Address:**

[info\\_dent@umanitoba.ca](mailto:info_dent@umanitoba.ca)

**Website:**

[umanitoba.ca/faculties/dentistry](http://umanitoba.ca/faculties/dentistry)

**Academic Staff:**

Please refer to the Faculty website at

[umanitoba.ca/faculties/dentistry](http://umanitoba.ca/faculties/dentistry)

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### SECTION 1: Degree Programs Offered

Program/Degree	Years to Complete	Total Credit Hours (dental program only)
Doctor of Dental Medicine (D.M.D.) (4 year program)	Minimum time to graduation: Six years (University 1, plus one year, plus four years in the Faculty of Dentistry).	366*
Doctor of Dental Medicine (D.M.D.) (International Dental Degree Program [IDDP] 2 year program)	After a 6 to 8 week summer orientation students in this program complete the 3 <sup>rd</sup> and 4 <sup>th</sup> year of the dental program.	186*

3.4 CPR Certification

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### SECTION 5:

Course Descriptions



Bachelor of Science in Dentistry  (note: only students enrolled in the D.M.D. program are eligible for admission)	This program is completed over two (2) summers, normally commencing after first year in the dental program.	N/A
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\* Course credit hour weightings are under revision. Changes will affect the program of students newly admitted in 2011-2012. Please see section 34 or contact the faculty for further information.

### 1.2 The Profession of Dentistry,

The Faculty of Dentistry is dedicated to educating dental, dental hygiene and graduate students in a progressive learning environment, conducting research in oral health, and serving the community and the oral health professions as a source of knowledge and expertise. The faculty serves as a bridge between the fundamental scientific foundation of the profession and its translation into health care for the public. Dentists enhance and promote the total health of patients through oral health management. Dentists are concerned with promoting oral health and preventing and alleviating the effects of oral diseases and conditions in order to contribute to the well-being of their patients.

The curriculum is designed to ensure that students graduate as competent dentists prepared to meet the oral health care needs of their patients. It provides the knowledge of basic biomedical, behavioural and clinical sciences and biomaterials, the cognitive and behavioural skills, and the professional and ethical values necessary for practice as a dental professional.

Information on the Dental Hygiene program is in the chapter, [School of Dental Hygiene](#).

### Licensing Requirements

A graduate of the Faculty of Dentistry is entitled to apply to the Manitoba Dental Association to obtain a license to practice within the province of Manitoba. For information on licensing requirements and the application process please contact: The Registrar, [Manitoba Dental Association](#), 103 - 698 Corydon Avenue, Winnipeg, Manitoba R3M 0X9; telephone (204) 988 5300.

### National Examining Body

Graduates of this faculty are required to sit a written examination and an objective structured clinical examination during the calendar year of their graduation, administered by the National Dental Examining Board of Canada. The NDEB certification granted to graduates who pass these examinations, entitles them to apply for a license to practice in all provinces of Canada. The provinces of Ontario and Quebec have additional requirements. For information contact: The Registrar, [National Dental Examining Board](#), 80 Elgin Street, 2nd Floor, Ottawa, Ontario K1P 6R2; telephone (613) 236 5912.

### Other Licensing Bodies

For regulations governing licensure in other areas (e.g., other provinces, the United States), candidates are advised to write the licensing body in the province/state in which they are interested.

## SECTION 2: Admission Requirements

### 2.1 Doctor of Dental Medicine,

Minimum time to graduation: Six years (University 1, plus one year, plus four years in the Faculty of Dentistry).

The following is a summary of the admission requirements. Equivalent academic courses completed at recognized universities elsewhere will be considered. All admission requirements, as well as application deadline dates and forms, are included in an application bulletin that is available from the [Admissions Office](#), Enrolment Services, 424 University Centre; this information is also posted on the university's website ([umanitoba.ca/dentistry](http://umanitoba.ca/dentistry)).

After University 1, most students choose the Faculty of Science because the pre-Dentistry requirements easily fit Science degree programs.

Minimum 60 credit hours of pre-Dentistry study including:

BIOL 1020 and 1030

CHEM 1300 and CHEM 1310

CHEM 2210 and 2220

CHEM 2360 and CHEM 2370 or MBO 2360 and MBO 2370

PHYS 1020 and 1030 or PHYS 1050 and 1070

6 credit hours of English

24 credit hours of electives, 6 of which must be in the non-applied sciences or non-pure sciences.

All science courses must include the laboratory component.

### Other requirements

High school prerequisites: Chemistry 40S, Mathematics 40S, Physics 40S and Biology 40S.



The 6 credit hours of English satisfies the written English requirement; the mathematics requirement must be met in the first 60 credit hours even though it is not a specific admissions requirement.

The English Canadian Dental Aptitude Test (DAT) must be written.

A personal interview is required.

Admission is competitive.

Information on the admission process may be accessed through the Faculty of Dentistry's web page ([umanitoba.ca/dentistry](http://umanitoba.ca/dentistry)) or by requesting an Information Application Bulletin from either the Faculty of Dentistry or the [umanitoba.ca/admissions](http://umanitoba.ca/admissions) (Enrolment Services)

Selection criteria: Grades, interview and DAT score equally weighted.

### 2.2 Bachelor of Science in Dentistry,

In addition to the basic professional degree, the faculty offers the Bachelor of Science in Dentistry to interested dental students wishing to undertake research during their undergraduate program. The program is designed to assure that participation in it will not interfere with the student's dental degree. Through active participation in a research program, the students will be given the opportunity to develop skills in applying scientific knowledge to dental practice and an interest in dental research. In addition, the program will serve as a preparatory step for entry into various graduate programs. Information on admission to this program is available from the Dean's Office and through the Faculty of Dentistry's web page ([umanitoba.ca/dentistry](http://umanitoba.ca/dentistry)).

### 2.3 International Dentist Degree Program (IDDP),

The Faculty of Dentistry, University of Manitoba, offers the International Dentist Degree Program (IDDP) to a maximum of 7 graduates of international dental programs that are not accredited by the Commission on Dental Accreditation of Canada. After a 6 to 8 week summer orientation program, students enter the 3rd year of the regular dental program of the Faculty. Upon satisfactory completion of the 3rd and 4th years of the dental program, IDDP participants will be awarded the Doctor of Dental Medicine (DMD) degree. All graduates of DMD programs in Canada, once having passed the National Dental Examining Board of Canada (NDEB) examinations, are eligible for licensure/registration as a dentist in all provinces in Canada.

Requirement to the IDDP program can be found at the Faculty of Dentistry's website at: [umanitoba.ca/dentistry/IDDP](http://umanitoba.ca/dentistry/IDDP). **Please note that there are two tracks which may be applied to.**

**Should you have specific questions that cannot be answered from the above website, please call the IDDP Coordinator at (204) 977-5611.**

## SECTION 3: Faculty Academic Regulations

All students are asked to note that some academic policies and regulations are under review and are subject to change. Please check the Web Calendar at [umanitoba.ca](http://umanitoba.ca) for updated information.

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. In addition, the Faculty of Dentistry has regulations and requirements, published below that apply specifically to its students.

### 3.1 Instruments Computers and Textbook ,

Students entering the Faculty of Dentistry will be expected to own or purchase a laptop computer that is compliant with University computer standards (see Bookstore - Computers on Campus for annual listing) and Vital Source Technology software requirements. The expenditure of a computer may range approximately from \$1000 to \$4000 within the first year of the program. The Vital Source Technologies costs over the four year program is approximately \$4000 USD and depending on the Canadian exchange rate, students will be required to make four annual payments of approximately \$1000/year to cover the full costs. These costs replace former textbook expenditures.

Students are responsible for clinic educational fees, the purchase of some instruments ('kit') and other sundry items as may be necessary or required. Over the four years of dentistry, the costs of such instruments/fees has been approximately \$44,000 (see fee schedule); the bulk of the expenditure is incurred in the first two years. "Specific items and instruments purchased by students are their property\*". The faculty is unable to accept returns of any student computer software, clinic (kit) fees, instruments or other items should a student leave the faculty for whatever reason and upon graduation.

\* Under review and subject to change. Please contact the faculty for further information.

### 3.2 Criminal Record/Child Abuse Registry,

An adult criminal record and child abuse registry self-declaration will be required of all applicants at the time of application. A formal Adult Criminal Record Check (including vulnerable sector screening) and a formal Child Abuse Registry Check is required at the time of registration, and annually thereafter keeping in accordance with existing policies of other health, education and social service programs at the University of Manitoba.

Failure to provide these documents may impact on registration and a student's ability to progress in the Dental program.



### 3.3 Immunization and Blood Borne Diseases Policy ,

**Note:** This policy is under review. Please consult the Faculty of Dentistry for further information.

All students enrolled in the Faculty of Dentistry must be immunized against the following diseases: diphtheria/tetanus, polio, rubella, measles, mumps, varicella (chicken pox) and hepatitis B. Students must be tested for tuberculosis if a suspected exposure occurs. Students who cannot be immunized because of allergies or for other reasons must provide a physician's certificate to verify these reasons.

Before the first day of classes, all students must complete the University of Manitoba Immunization Record Form provided by the Admissions Office. A physician or nurse must sign immunization records. All students are responsible for updating their immunizations as needed.

Students will not be permitted to attend clinics until all immunization requirements are up-to-date

### 3.4 CPR Certification,

Accepted candidates will be required to show proof of CPR certification by October 15 of each year. The CPR Certification level required by the Faculty of Dentistry is: Health Career Provider (HCP CPR Level C). This certification must be maintained on a yearly basis up to the date of graduation.

### 3.5 Attendance,

See the chapter, [General Academic Regulations and Requirements](#). The Faculty of Dentistry has additional regulations that can be found in the Student Handbook, available on-line via the Faculty's web page ([umanitoba.ca/dentistry](http://umanitoba.ca/dentistry)).

### 3.6 Voluntary Withdrawal,

Students intending to withdraw from a portion or all of their courses must report immediately in person or in writing to the Dean's Office. No fees will be refunded without the authorization of the dean. **Please Note: Computer Software, Clinic and Kit fees and/or kit items are non-refundable.** See also the chapter on General Academic Regulations and Requirements.

Students who withdraw from the Faculty of Dentistry without notice will be considered to have terminated their connection with the faculty. If a subsequent application for registration is approved, they will be required to conform to the rules and regulations, fee schedules, sequence of courses, etc., in effect at the time of such subsequent application.

In cases where a student is obliged to withdraw after the final date of withdrawal published in the *Calendar* because of ill health or other sufficient reasons, their cases will be considered by the dean of the faculty.

### 3.7 Required Withdrawal,

The Senate of the university has approved bylaws granting certain faculties and schools the authority to require a student to withdraw on the basis of unsuitability for the practice of the profession to which the program of study normally leads. Senate has approved such a bylaw for the Faculty of Dentistry, and is available from the Dean's Office.

### 3.8 Decisions Concerning Academic Promotions,

The letter grade "D" is the lowest acceptable level of performance in each undergraduate course leading to the degree of D.M.D. when the work of any given year is being taken for the first time. (In the case of a repeated year, the minimum passing grade in each course is "C".)

A student who has a failing grade registered against him/her may not register for the program of the subsequent year, but may, at the discretion of Dental Faculty Council, be permitted to repeat the failed year.

A minimum term GPA of 2.0 in each year is required to qualify a student for standing in that year.

A student who fails to obtain a minimum term GPA of 2.0 and who is not granted supplemental privileges will be considered to have failed the year.

Except by special permission of Dental Faculty Council, no student may repeat more than one year in Dentistry, nor may any year be repeated more than once.

The work requirements of any repeated year may be modified, even increased, at the discretion of the Dental Faculty Council.

The passing grade in each course of a repeated year in Dentistry is "C".

If a student receives an "F" grade in a fourth year clinical course, they will be required to register and pay a fee for the entire repeated year, and the work in that year may be modified or even increased by Dental Faculty Council.

### 3.9 Incomplete Standing in the Faculty of Dentistry,

The incomplete "(F)" designation is restricted to clinical courses.

Successful completion of course requirements is through extended clinics rather than supplemental assessment.

A student who is unable to complete the quantitative clinical requirements in a course by the end of the academic year may apply for an incomplete grade classification ["(F)"] and extension of time. Details of this application procedure can be found in Dentistry's "Student Handbook" (on-line).

### 3.10 Supplemental Examinations,



A "Supplemental Examination" is an examination which may be offered as a privilege to a student who has failed a course or failed to achieve a satisfactory result. Such examinations are offered in order to grant the student an opportunity to rectify the inadequacy without repeating the course.

Information on Supplemental Examinations can be found in the chapter, [General Academic Regulations and Requirements](#) at the beginning of this *Calendar*. Specific information on The Faculty of Dentistry's supplemental privileges can be found in Dentistry's "Student Handbook" (on-line).

### 3.11 Honours and Awards,

Dean's Honour List: awarded to students in each year of the dental program who have achieved a minimum sessional (fall & winter term combined) G.P.A. of 3.8.

To qualify for Graduation with Honours, a candidate for the D.M.D. degree must qualify for the Dean's Honour List in both third and fourth year.

A student who repeats a year at his/her own request, i.e., not at the request of Dental Faculty Council, is not eligible for the Dean's Honour List or to receive any awards for the work in that repeated year.

The following policy applies to the eligibility of part-time students for academic awards: in allocating any award, the only academic performance of a student to be considered is that attained during the year(s) for which the award is made. Therefore, a part-time student is not eligible for any purely academic award, other than one in an individual course. However, a part-time student who is carrying 80 per cent or more of the normal course load for the year is eligible for any

award where conditions other than academic merit apply, and further, subject to the provisions set forth above, any part-time student is eligible for any award in the individual courses taken in the year for which the award is made.

### 3.12 E-Mail Accounts,

All students are expected to have an e-mail account with the University of Manitoba and check it regularly. The Faculty of Dentistry does not support communications with its students through external e-mail addresses.

### 3.13 Financial Aid ,

A number of loan and bursary funds are available to dental students. Applications and further information are available in the Dean's Office and through the University of Manitoba's [Financial Aid and Awards Office](#).

### 3.14 Registration Exceptions,

Students who have a failing grade/s registered against them and/or have other outstanding academic matters (i.e. deferred or supplemental examinations, modified program, etc.) in regards to the previous academic session will not be allowed to register using Aurora Student. Students who fall into this category should contact the student advisor for further information. A student advisor is available in D028 Dental Building or by calling (204) 789-3484.

Registration holds will also be placed on students who have outstanding non-academic matters (i.e. outstanding criminal record and child abuse registry checks, CPR requirements, *Vital Source* fees, etc.)

## SECTION 4: Program and Graduation Requirements

### 4.1 First Year,

		Newly Admitted in 2011-2012 and Forward		Credit Hours
DDSS 1100	Periodontology 1			1
DDSS 1110	Radiology 1			1
DENT 1202	Early Clinical Experience			3
DENT 1210	Dental Practice Management	1		
ORLB 1302	Cell and Tissue Biology			4
ORLB 1310	Head, Neck and Nervous System Part 1			4
ORLB 1320	Head, Neck and Nervous System Part 2			3
ORLB 1330	Human Growth and Development			3
ORLB 1340	Oral Tissues Structure and Function			3
PDSD 1400	Orthodontics 1			2
RSTD 1500	Dental Materials 1			2
RSTD 1512	Operative Dentistry 1			6
RSTD 1520	Dental Anatomy			3
RSTD 1530	Occlusion	2		
RSTD 1550	Introduction to Dentistry			2
Admitted Prior to 2011				
DDSS 1020	Periodontology 1			6
DDSS	Radiology - 1			6



1140		
DENT 1202	Early Clinical Experience	6
ORLB 1050	Cell & Tissue Biology	6
ORLB 1060	Head, Neck & Nervous System, Part 1	6
ORLB 1070	Head, Neck & Nervous System, Part 2	6
ORLB 1080	Human Growth & Development	6
ORLB 1090	Development, Structure & Function of Oral Tissues	6
PDSO 1020	Orthodontics - 1	6
RSTD 1070	Dental Materials - 1	6
RSTD 1100	Operative Dentistry - 1	6
RSTD 1110	Dental Anatomy & Occlusion	6
RSTD 1120	Introduction to Dentistry	6

**4.2 Second Year,**

	Newly Admitted in 2011-2012 & Forward	Credit Hours
DDSS 2122	Oral Pathology	5
DDSS 2130	Pain and Anxiety Control 1	1
DDSS 2100	Periodontology 2	2
DDSS 2110	Radiology 2	1
DENT 2202	Introduction to Comprehensive Care	4
ORLB 2312	Structure and Function of Major Organ Systems	4
ORLB 2320	Cariology and Plaque Associated Diseases	3
ORLB 2300	Pathology and Microbiology 1	1
ORLB 2330	Nutrition in Dentistry	2
PDSO 2400	Orthodontics 2	2
PDSO 2410	Pediatric Dentistry 1	3
PDSO 2420	Dental Public Health	1
RSTD 2502	Dental Materials 2	2
RSTD 2510	Operative Dentistry 2	3
RSTD 2520	Endodontology 1	2
RSTD 2532	Fixed Prosthodontics 1	6
RSTD 2540	Removable Partial Denture Prosthodontics	3
RSTD 2552	Complete Denture Prosthodontics	4

	Admitted prior to 2011	Credit Hours
DDSS 2010	Oral Pathology	6
DDSS 2020	Pain and Anxiety Control 1	6
DDSS 2120	Periodontology 2	6
DDSS 2180	Radiology 2	6
DENT 2430	Introduction to Comprehensive Care	6
ORLB 2070	Structure and Function of Major Organ Systems	6
ORLB 2090	Cariology and Plaque Associated Diseases	6
ORLB 2100	Pathology and Microbiology 1	6
ORLB 2150	Nutrition in Dentistry	6
PDSO 2020	Orthodontics 2	6
PDSO 2070	Pediatric Dentistry 1	6
PDSO 2130	Dental Public Health	6
RSTD 2020	Dental Materials 2	6



RSTD 2050	Operative Dentistry 2	6
RSTD 2060	Endodontology 1	6
RSTD 2140	Fixed Partial Denture Prosthesis 1	6
RSTD 2220	Removable Partial Denture Prosthodontics	6
RSTD 2230	Complete Denture Prosthodontics	6

**4.3 Third Year \***

DDSS 3030	Medicine	6
DDSS 3200	Oral Diagnosis and Radiology 1	6
DDSS 3210	Oral and Maxillofacial Surgery 1	6
DDSS 3220	Periodontology 3	6
DDSS 3230	Pain and Anxiety Control 2	6
ORLB 3020	Pathology and Microbiology 2	6
ORLB 3060	Pharmacology and Dental Therapeutics	6
PDSO 3040	Orthodontics 3	6
PDSO 3050	Pediatric Dentistry 2	6
PDSO 3140	Dental Public Health/ Preventive Dental Science	6
RSTD 3020	Operative Dentistry 3	6
RSTD 3040	Fixed Partial Denture Prosthesis 2	6
RSTD 3050	Endodontology 2	6
RSTD 3090	Complete and Removable Partial Dental Prosthesis	6

\* IDDP Students must also complete a 6-8 week Orientation prior to commencing the 3<sup>rd</sup> year of the program (DENT 2440, IDDP Orientation – 6 credit hours)

**4.4 Fourth Year,**

DDSS 4080	Psychiatry	6
DDSS 4130	Hospital Dentistry	6
DDSS 4200	Oral Diagnosis and Radiology 2	6
DDSS 4210	Oral and Maxillofacial Surgery 2	6
DENT 4020	Interdisciplinary Case Studies	6
DENT 4030	General Practice Clinic	30
PDSO 4050	Pediatric Dentistry 3	6
PDSO 4060	Orthodontics 4	6
PDSO 4080	Community Dentistry Externship	6
RSTD 4060	Endodontic Seminars	6
RSTD 4160	Dental Jurisprudence	6
RSTD 4170	Practice Management	6

**SECTION 5.1 -First Year Courses Prior to 2011**

**DDSS 1020** Periodontology 1 Cr.Hrs.6  
(Formerly 103.102) A laboratory course designed to introduce students to periodontal examination procedures and to basic periodontal instrumentation.

**DDSS 1140** Radiology 1 Cr.Hrs.6  
(Formerly 103.114) A series of lectures which introduces the student to: the elementary principles of dental radiology; radiation physics, radiation biology, imaging techniques, x-ray equipment, and radiation protection.

**DENT 1010** Early Clinical Experience Cr.Hrs.6  
(Formerly 066.101) A series of lectures and clinical participation sessions designed to introduce the student to clinical dentistry and the relevance of basic science courses in the dental curriculum. Course evaluated on a pass/fail basis.

**ORLB 1050** Cell and Tissue Biology Cr.Hrs.6  
(Formerly 100.105) Structure, function and chemical

composition of eucaryotic cells and bacteria will be studied. Molecular interactions within and between cells and the immune system will be described in detail.

**ORLB 1060** Head, Neck and Nervous System, Part 1 Cr.Hrs.6  
(Formerly 100.106) Gross anatomy of the head and neck are described and observed by regional dissection. Overviews of the nervous system and surface anatomy of the mouth are included.

**ORLB 1070** Head, Neck and Nervous System, Part 2 Cr.Hrs.6  
(Formerly 100.107) An introduction to the structure and function of the central and peripheral nervous systems and associated structures, the neurophysiology and the stomatognathic system, pain and analgesics.

**ORLB 1080** Human Growth and Development Cr.Hrs.6  
(Formerly 100.108) Human development from the origin of the reproductive cells through fertilization, conception, embryonic/fetal development, birth, growth and aging. Particular emphasis is given to development and growth of structures of the head and neck.



**ORLB 1090** Development, Structure and Function of Oral Tissues Cr.Hrs.6  
(Formerly 100.109) A study of development, structure and function of hard and soft oral tissues, the role of organic constituents in them, and their importance to the practice of dentistry.

**PDSD 1020** Orthodontics - 1 Cr.Hrs.6  
(Formerly 101.102) A series of seminars and tutorials designed to introduce the student to: growth and development of craniofacial structures, relationship of craniofacial growth to general body growth, cephalometric and facial analysis, etiology and classification of malocclusion, development of the dentition and preliminary wire bending and manipulation in orthodontics.

**RSTD 1070** Dental Materials - 1 Cr.Hrs.6  
(Formerly 102.107) This course introduces the materials commonly used in dental practice. Composition, chemistry, properties, manipulation and manipulative variables are covered by lecture, laboratory exercises and demonstrations.

**RSTD 1100** Operative Dentistry - 1 Cr.Hrs.6  
(Formerly 102.110) A lecture and laboratory course introducing the fundamentals of tooth restoration. Hand and rotary instrumentation, principles of tooth preparation and restoration with amalgam, inlays and composite resin.

**RSTD 1110** Dental Anatomy and Occlusion Cr.Hrs.6  
(Formerly 102.111) A lecture and laboratory/seminar course introducing dental terminology, tooth identification, dental morphology and comparative anatomy in first term and the relationships of morphology to functional occlusion in second term.

**RSTD 1120** Introduction to Dentistry Cr.Hrs.6  
(Formerly 102.112) A series of lectures and seminars which introduce the student to the profession, its structure and governance. As well, communication skills and professional ethics will be introduced. Students will also experience the practice of dentistry through field trips and student presentations. Course evaluated on a pass/fail basis.

## SECTION 5.1 First Year Courses as of 2011-2012

**DDSS 1100** Periodontology 1 Cr.Hrs.1  
Predominately a pre-clinical laboratory course designed to introduce students to periodontal examination procedures and to basic non-surgical periodontal therapy. May not be held with DDSS 1020.

**DDSS 1110** Radiology 1 Cr.Hrs.1  
A series of lectures which introduces the student to: the elementary principles of dental radiology; radiation physics, radiation biology, imaging techniques, x-ray equipment and radiation protection. May not be held with DDSS 1140.

**DENT 1202** Early Clinical Experience Cr.Hrs.3  
A series of lectures and clinical participation sessions designed to introduce the student to clinical dentistry and the relevance of basic science courses in the dental curriculum. May not be held with DENT 1010. Course evaluated on a pass/fail basis.

**DENT 1210** Dental Practice Management 1 Cr.Hrs.1  
This course is an introduction to the Dental Practice Management curriculum which is distributed throughout the four year program. It comprises the modules on the Essentials of Effective Leadership and Strategic Leadership; Managing the Workplace and Conflict Resolution; Essentials of Interpersonal Communication Skills; and Team Building.

**ORLB 1302** Cell and Tissue Biology Cr.Hrs.4  
Structure, function and chemical composition of eucaryotic cells and oral bacteria will be studied. Taste signaling, diseases, and molecular interactions within and between cells and the immune system will be described in detail. May not be held with ORLB 1050.

**ORLB 1310** Head, Neck and Nervous System, Part 1 Cr.Hrs.4  
Gross anatomy of the head and neck are described and observed by regional dissection. Overviews of the nervous system and surface anatomy of the mouth are included. May not be held with ORLB 1060.

**ORLB 1330** Human Growth and Development Cr.Hrs.3  
Human development from the origin of the reproductive cells through fertilization, conception, embryonic/fetal development, birth, growth and aging. Particular emphasis is given to development and growth of structures of the head and neck. May not be held with ORLB 1080.

**ORLB 1340** Oral Tissues, Structure and Function Cr.Hrs.3  
This course is designed to present the normal morphology, developmental biology, biochemical structure, metabolism and functions of the dentition and para oral tissues, cartilage, bone and exocrine glands of the head and neck. Structural functional aspects of oral anatomy, biochemistry/molecular biology and physiology will be included. May not be held with ORLB 1090.

**PDSD 1400** Orthodontics 1 Cr.Hrs.2  
A series of lectures, workshops and practica designed to introduce the student to the orthodontic perspectives of applied: growth and development of craniofacial structures, relationship of craniofacial growth to general body growth, cephalometric and facial analysis, etiology and classification of malocclusion, development of the dentition, basic biomechanics and preliminary orthodontic wire bending and manipulation in orthodontics. May not be held with PDSD 1020.

**RSTD 1500** Dental Materials 1 Cr.Hrs.2  
This course introduces the materials commonly used in dental practice. Composition, chemistry, properties, manipulation and manipulative variables are covered by lecture, laboratory exercises and demonstrations. May not be held with RSTD 1070.

**RSTD 1512** Operative Dentistry 1 Cr.Hrs.6  
A lecture and laboratory course introducing the fundamentals of operative dentistry. Lectures and laboratory exercises in the principles of cavity preparation, utilization of rotary and hand instruments and manipulation, placement and finishing of restorative materials are presented. May not be held with RSTD 1100.

**RSTD 1520** Dental Anatomy Cr.Hrs.3  
A lecture and laboratory/seminar course introducing dental terminology, tooth identification, dental morphology and



concepts of dental anatomy as it relates to the intraoral functional relationship. May not be held with RSTD 1110.

**RSTD 1530 Occlusion Cr.Hrs.2**

A lecture and laboratory course designed to introduce the student to the concepts of dental occlusion and the relationship between the anatomy of the teeth and the TMJ. May not be held with RSTD 1110.

**RSTD 1540 Introduction to Dentistry Cr.Hrs.3**

A series of lectures and seminars which introduce the student to the profession, its structure and governance. Professionalism, dental ethics and communication skills are also introduced. May not be held with RSTD 1120. Course evaluated on a pass/fail basis.

**RSTD 1550 Introduction to Dentistry Cr.Hrs.2**

A series of lectures and seminars which introduce the student to the profession, its structure and governance. Professionalism, dental ethics and communication skills are also introduced. May not be held with RSTD 1120 or RSTD 1540. Course evaluated on a pass/fail basis.

## SECTION 5.1 Second Year Courses Prior to 2011

**DDSS 2010 Oral Pathology Cr.Hrs.6**

(Formerly 103.201) A series of lectures emphasizing recognition, description, etiopathogenesis, clinical and/or radiographic features, biologic behaviour, treatment and/or management of oral and paraoral pathologic conditions.

**DDSS 2020 Pain and Anxiety Control 1 Cr.Hrs.6**

(Formerly 103.202) A series of lectures to introduce the student to: local anaesthetics, local anaesthesia techniques, avoidance and management of complications and selection of appropriate drugs and techniques.

**DDSS 2120 Periodontology 2 Cr.Hrs.6**

(Formerly 103.212) An introductory course with emphasis on periodontal structures in health and disease, the etiology and diagnosis of periodontal disease, as well as the role of occlusion.

**DDSS 2180 Radiology 2 Cr.Hrs.6**

(Formerly 103.218) A series of lectures in the theoretical and practical principles of radiographic interpretation of common oral pathologic conditions as well as selected examples of pathologic conditions exhibiting important radiographic principles.

**DENT 2430 Introduction to Comprehensive Care Cr.Hrs.6**

(Formerly 066.243) This course is an introduction to an integrated, patient-centered program with patient needs as the primary focus. The course introduces students to clinical protocol and patient record documentation and communication. Students receive experience in comprehensive treatment planning as well as basic treatments in periodontics, operative dentistry, and pain control. Course evaluated on a pass/fail basis.

**ORLB 2070 Structure and Function of Major Organ Systems Cr.Hrs.6**

(Formerly 100.207) This course emphasizes the basic structure at both organ and cellular levels of a number of organ systems and an understanding of their role in total

body function.

**ORLB 2090 Cariology and Plaque Associated Diseases Cr.Hrs.6**

(Formerly 100.209) A study of the various dietary, host and microbial factors involved in the etiology of dental caries and periodontal disease, and a discussion of the various methods of plaque control.

**ORLB 2100 Pathology and Microbiology 1 Cr.Hrs.6**

(Formerly 100.210) Study of the basic mechanisms of microbial pathogenicity and general pathology as they relate to dentistry and dental treatment. Includes the pathogenesis of bacterial, viral and fungal infections and the etiology of neoplastic, inflammatory and metabolic diseases.

**ORLB 2150 Nutrition in Dentistry Cr.Hrs.6**

(Formerly 100.215) The course covers the role of nutrition in general health and disease with emphasis on the prevention and management of oral problems in Dentistry.

**PDSD 2020 Orthodontics - 2 Cr.Hrs.6**

(Formerly 101.202) A series of lectures and laboratories to introduce the student to: clinical protocol for examination, diagnosis and treatment planning of malocclusions, concepts of occlusion and biomechanics of orthodontic therapy, and fabrication of orthodontic appliances.

**PDSD 2070 Pediatric Dentistry - 1 Cr.Hrs.6**

(Formerly 101.207) A series of lectures and laboratories to introduce the student to: the fundamental principles of dental growth and development of children, introduction to operative dentistry and preventive techniques commonly used in dentistry for children.

**PDSD 2130 Dental Public Health Cr.Hrs.6**

(Formerly 101.213) A series of lectures dealing with dental epidemiology, demography, water fluoridation, and dental health education, program planning and evaluation. The organization of the Canadian health care system is examined with special reference to dental care and Aboriginal health issues.

**RSTD 2020 Dental Materials - 2 Cr.Hrs.6**

(Formerly 102.202) This course develops a scientific basis for the selection, application, manipulation and clinical performance of dental materials. The relationship between the properties of a material and its manipulation, application and clinical behaviour is developed.

**RSTD 2050 Operative Dentistry - 2 Cr.Hrs.6**

(Formerly 102.205) A lecture and laboratory course presenting modern and advanced techniques in tooth restoration. Composite resins, adhesion to tooth structure, esthetic restorations and protection of tooth vitality. Introduction to clinical treatment modalities and treatment priorities.

**RSTD 2060 Endodontology - 1 Cr.Hrs.6**

(Formerly 102.206) Introduction to root canal therapy as a clinical practice, pulp and periapical pathology. The majority of the teaching is directed at the understanding and actual performance of practical endodontic techniques, performed in the laboratory setting on mannequins using extracted human teeth.



**RSTD 2140** Fixed Partial Denture Prosthesis - 1 Cr.Hrs.6 (Formerly 102.214) This course consists of lecture and laboratory instruction introducing basic fixed prosthodontic techniques.

**RSTD 2220** Removable Partial Denture Prosthodontics Cr.Hrs.6

The didactic portion of this course presents the principles for the treatment of partially edentulous patients. The procedures and techniques founded on the basic principles make up the laboratory exposure.

**RSTD 2230** Complete Denture Prosthodontics Cr.Hrs.6

The didactic portion of this course presents the principles for the treatment of edentulous patients. Emphasis is placed on techniques of treatment in the laboratory component.

## SECTION 5.1 Second Year Courses as of 2011-2012

**DDSS 2122** Oral Pathology Cr.Hrs.5

A series of lectures emphasizing recognition, description, etiopathogenesis, clinical and/ or radiographic features, biologic behaviour, treatment and/or management of oral and paraoral conditions. May not be held with DDSS 2010.

**DDSS 2130** Pain and Anxiety Control 1 Cr.Hrs.1

A series of lectures to introduce the student to: local anaesthetics, local anaesthesia techniques, avoidance and management of complications and selection of appropriate drugs and techniques. May not be held with DDSS 2020.

**DDSS 2100** Periodontology2 Cr.Hrs.2

An introductory course with emphasis on periodontal structures in health and disease, the etiology and diagnosis of periodontal disease, as well as the role of occlusion. May not be held with DDSS 2120.

**DDSS 2110** Radiology 2 Cr.Hrs.1

A series of lectures in the theoretical and practical principles of radiographic interpretation of common oral pathologic conditions as well as selected examples of pathologic conditions exhibiting important radiographic principles. May not be held with DDSS 2180.

**DENT 2202** Introduction to Comprehensive Care Cr.Hrs.4

This course is an introduction to an integrated, patient-centered program with patient needs as the primary focus. The course introduces students to clinical protocol and patient record documentation and communication. Students receive experience in comprehensive treatment planning as well as basic treatments in periodontics, operative dentistry, and pain control. Course evaluated on a pass/fail basis. May not be held with DENT 2430.

**ORLB 2312** Structure and Function of Major Organ Systems Cr.Hrs.4

This course emphasizes the basic structure at both organ and cellular levels of a number of organ systems and an understanding of their role in total body function. May not be held with ORLB 2070.

**ORLB 2320** Cariology and Plaque Associated Diseases Cr.Hrs.3

A study of the various dietary, host and microbial factors in the etiology of dental caries and periodontal disease, and a

discussion of the various methods of plaque control. May not be held with ORLB 2090.

**ORLB 2300** Pathology and Microbiology 1 Cr.Hrs.1

Study of the basic mechanisms of microbial pathogenicity and general pathology as they relate to dentistry and dental treatment. Includes the pathogenesis of bacterial, viral and fungal infections and the aetiology of neoplastic, inflammatory and metabolic diseases. May not be held with ORLB 2100.

**ORLB 2330** Nutrition in Dentistry Cr.Hrs.2

The course covers the role of nutrition in general health and disease with emphasis on the prevention and management of oral problems in Dentistry. May not be held with ORLB 2150.

**PDSO 2400** Orthodontics-2 Cr.Hrs.2

A series of lectures and laboratories to introduce the student to: clinical protocol for examination, diagnosis and treatment planning of malocclusions, concepts of occlusion and biomechanics of orthodontic therapy, and fabrication of orthodontic appliances. May not be held with PDSO 2020.

**PDSO 2410** Pediatric Dentistry- 1 Cr.Hrs.3

A series of lectures and laboratories to introduce the student to: the fundamental principles of dental growth and development of children, introduction to operative dentistry and preventative techniques commonly used in dentistry for children. May not be held with PDSO 2070.

**PDSO 2420** Dental Public Health Cr.Hrs.1

A series of lectures dealing with dental epidemiology, demography, water fluoridation, and dental health education, program planning and evaluation. The organization of the Canadian health care system is examined with special reference to dental care and Aboriginal health issues. May not be held with PDSO 2130.

**RSTD 2502** Dental Materials-2 Cr.Hrs.2

This course develops a scientific basis for the selection, application, manipulation and clinical performance of dental materials. The relationship between the properties of a material and its manipulation, application and clinical behaviour is developed. May not be held with RSTD 2020.

**RSTD 2510** Operative Dentistry-2 Cr.Hrs.3

A lecture and laboratory course presenting modern and advanced techniques in tooth restoration. Composite resins, adhesion to tooth structure, esthetic restorations and protection of tooth vitality. Introduction to clinical treatment modalities and treatment priorities. May not be held with RSTD 2050.

**RSTD 2520** Endodontology-1 Cr.Hrs.2

Introduction to root canal therapy as a clinical practice, pulp and periapical pathology. The majority of the teaching is directed at the understanding and actual performance of practical endodontic techniques, performed in the laboratory setting on mannequins using extracted human teeth. May not be held with RSTD 2060.

**RSTD 2532** Fixed Prosthodontics 1 Cr.Hrs.6

This course consists of lecture and laboratory instruction introducing basic fixed prosthodontic techniques. May not be held with RSTD 2140.



**RSTD 2540** Removable Partial Denture  
Prosthodontics Cr.Hrs.3

The didactic portion of this course presents the principles for the treatment of partially edentulous patients. The procedures and techniques founded on the basic principles make up the laboratory exposure. May not be held with RSTD 2220.

**RSTD 2552** Complete Denture Prosthodontics Cr.Hrs.4

The didactic portion of this course presents the principles for the treatment of edentulous patients. Emphasis is placed on techniques of treatment in the laboratory component. May not be held with RSTD 2230.

### SECTION 5.1 Oral Biology

**ORLB 1050** Cell and Tissue Biology Cr.Hrs.6

(Formerly 100.105) Structure, function and chemical composition of eucaryotic cells and bacteria will be studied. Molecular interactions within and between cells and the immune system will be described in detail.

**ORLB 1060** Head, Neck and Nervous System, Part 1 Cr.Hrs.6

(Formerly 100.106) Gross anatomy of the head and neck are described and observed by regional dissection. Overviews of the nervous system and surface anatomy of the mouth are included.

**ORLB 1070** Head, Neck and Nervous System, Part 2 Cr.Hrs.6

(Formerly 100.107) An introduction to the structure and function of the central and peripheral nervous systems and associated structures, the neurophysiology and the stomatognathic system, pain and analgesics.

**ORLB 1080** Human Growth and Development Cr.Hrs.6

(Formerly 100.108) Human development from the origin of the reproductive cells through fertilization, conception, embryonic/fetal development, birth, growth and aging. Particular emphasis is given to development and growth of structures of the head and neck.

**ORLB 1090** Development, Structure and Function of Oral Tissues Cr.Hrs.6

(Formerly 100.109) A study of development, structure and function of hard and soft oral tissues, the role of organic constituents in them, and their importance to the practice of dentistry.

**ORLB 1302** Cell and Tissue Biology Cr.Hrs.4

Structure, function and chemical composition of eucaryotic cells and oral bacteria will be studied. Taste signaling, diseases, and molecular interactions within and between cells and the immune system will be described in detail. May not be held with ORLB 1050.

**ORLB 1310** Head, Neck and Nervous System, Part 1 Cr.Hrs.4

Gross anatomy of the head and neck are described and observed by regional dissection. Overviews of the nervous system and surface anatomy of the mouth are included. May not be held with ORLB 1060.

**ORLB 1330** Human Growth and Development Cr.Hrs.3

Human development from the origin of the reproductive cells

through fertilization, conception, embryonic/fetal development, birth, growth and aging. Particular emphasis is given to development and growth of structures of the head and neck. May not be held with ORLB 1080.

**ORLB 1340** Oral Tissues, Structure and Function Cr.Hrs.3

This course is designed to present the normal morphology, developmental biology, biochemical structure, metabolism and functions of the dentition and para oral tissues, cartilage, bone and exocrine glands of the head and neck. Structural functional aspects of oral anatomy, biochemistry/molecular biology and physiology will be included. May not be held with ORLB 1090.

**ORLB 2070** Structure and Function of Major Organ Systems Cr.Hrs.6

(Formerly 100.207) This course emphasizes the basic structure at both organ and cellular levels of a number of organ systems and an understanding of their role in total body function.

**ORLB 2090** Cariology and Plaque Associated Diseases Cr.Hrs.6

(Formerly 100.209) A study of the various dietary, host and microbial factors involved in the etiology of dental caries and periodontal disease, and a discussion of the various methods of plaque control.

**ORLB 2100** Pathology and Microbiology 1 Cr.Hrs.6

(Formerly 100.210) Study of the basic mechanisms of microbial pathogenicity and general pathology as they relate to dentistry and dental treatment. Includes the pathogenesis of bacterial, viral and fungal infections and the aetiology of neoplastic, inflammatory and metabolic diseases.

**ORLB 2150** Nutrition in Dentistry Cr.Hrs.6

(Formerly 100.215) The course covers the role of nutrition in general health and disease with emphasis on the prevention and management of oral problems in Dentistry.

**ORLB 2300** Pathology and Microbiology 1 Cr.Hrs.1

Study of the basic mechanisms of microbial pathogenicity and general pathology as they relate to dentistry and dental treatment. Includes the pathogenesis of bacterial, viral and fungal infections and the aetiology of neoplastic, inflammatory and metabolic diseases. May not be held with ORLB 2100.

**ORLB 2312** Structure and Function of Major Organ Systems Cr.Hrs.4

This course emphasizes the basic structure at both organ and cellular levels of a number of organ systems and an understanding of their role in total body function. May not be held with ORLB 2070.

**ORLB 2320** Cariology and Plaque Associated Diseases Cr.Hrs.3

A study of the various dietary, host and microbial factors in the etiology of dental caries and periodontal disease, and a discussion of the various methods of plaque control. May not be held with ORLB 2090.

**ORLB 2330** Nutrition in Dentistry Cr.Hrs.2

The course covers the role of nutrition in general health and disease with emphasis on the prevention and management of oral problems in Dentistry. May not be held with ORLB



2150.

**ORLB 3020** Pathology and Microbiology 2 Cr.Hrs.6  
(Formerly 100.302) A study of selected infectious diseases and the application of general diagnostic pathology to dental practice.

**ORLB 3060** Pharmacology and Dental Therapeutics Cr.Hrs.6  
(Formerly 100.306) A discussion of the basic pharmacology of dental and medical therapeutic agents, their therapeutic uses and adverse effects and potential impact on the treatment of dental patients.

**ORLB 7030** Glandular Metabolism and Secretion Cr.Hrs.3  
(Formerly 100.703) Lectures and seminars dealing with all aspects of membrane transport and processes associated with transport within the cell.

**ORLB 7090** Pharmacology and Therapeutics Cr.Hrs.3  
(Formerly 100.709) A combined lecture and seminar course on the pharmacological basis of therapeutics. Special attention will be paid to drugs used commonly in the practice of dentistry, their side effects and their interaction.

**ORLB 7100** Oral Microbial Ecology Cr.Hrs.3  
(Formerly 100.710) Study of principles of ecology in relation to the various ecosystems in the oral cavity. In depth examination of the taxonomic relationships of oral bacterial species. Emphasis will be placed on the growth and metabolic activities of oral bacteria which lead to successful colonization of the mouth.

**ORLB 7110** Infectious Diseases and the Oral Cavity Cr.Hrs.3  
(Formerly 100.711) The description of the aetiology of microbial infections in the mouth and infections elsewhere in the body which involve oral bacteria. The control of such infections by vaccines, antibiotics and antimicrobial drugs. Treatment of infections in the immuno-suppressed, post operative infections and nosocomial infections. The relationships of host immune system to the oral flora.

**ORLB 7120** Special Problems in Oral Biology Cr.Hrs.3  
(Formerly 100.712) Each student will be required to carry out a minor research project in an area of oral biology other than that of their thesis work. The results of this project will be presented in a seminar and submitted as a written report.

**ORLB 7130** Macromolecular Interactions of Connective Tissue in Health and Disease Cr.Hrs.6  
(Formerly 100.713) A comprehensive study of the macromolecular constituents of connective tissue, of their synthesis, metabolism, macromolecular interaction in health and disease, and of their regulatory mechanisms.

**ORLB 7140** Cell Membrane and Cell Signaling Cr.Hrs.3  
This course will cover the structure and function of cell membrane receptors. The mechanisms and regulation of membrane coupled signal transduction pathways including those stimulated by oral tastants and drugs will also be covered.

**ORLB 7150** Cr.Hrs.3  
This course deals with the molecular pathology of the oral

cavity and maxillofacial complex.

**ORLB 7162** Neurophysiology of Pain Cr.Hrs.3  
This course examines the peripheral and central mechanisms associated with pain. Endogenous pain control systems and the pharmacological treatment of pain will also be covered.

**ORLB 7180** Recent Advances in Oral Biology Cr.Hrs.6  
(Formerly 100.718) This course is given by staff in the form of lectures and tutorials. Additional lectures may be given by visiting scientists. Students are expected to familiarize themselves with the relevant literature and are examined for an in-depth appreciation of the topics covered.

**ORLB 7190** Communication Skills in Dental Research Cr.Hrs.3  
(Formerly 100.719) A course to develop written, visual and oral communication skills in scientific and clinical disciplines related to dentistry.

## SECTION 5.2 General Dentistry

**DENT 4020** Interdisciplinary Case Studies Cr.Hrs.6  
(Formerly 066.402) Lectures and development of portfolio case designed to enable the student to obtain, organize and critically evaluate information in order to facilitate treatment planning.

**DENT 4030** General Practice Clinic Cr.Hrs.30  
(Formerly 066.403) This course consists of an integrated, patient-centered clinical program with patient needs as the primary focus. Patients will be assigned to students and organized to provide the required clinical experiences typical of a contemporary general dental practice.

## SECTION 5.3 Dental Diagnostic and Surgical Sciences

**DDSS 3030** Medicine Cr.Hrs.6  
(Formerly 103.303) Lectures or seminars describing the basic mechanisms, symptoms, diagnosis, and management of various disease processes included in internal medicine and their dental correlations.

**DDSS 3190** Temporomandibular Disorders and Orofacial Pain Cr.Hrs.6  
The course reviews the foundational clinical sciences in pain biology, and function of the masticatory muscles and TMJ. It discusses the contemporary classification, diagnosis and management of Temporomandibular disorders and related orofacial pain disorders.

**DDSS 3200** Oral Diagnosis and Radiology 1 Cr.Hrs.6  
(Formerly 103.320) This course includes a lecture component covering history-taking, clinical examination, diagnosis and treatment of soft and hard tissue lesions, emergency treatment, dental treatment of patients with systemic disease, and clinical experience.

**DDSS 3210** Oral and Maxillofacial Surgery 1 Cr.Hrs. 6  
(Formerly 103.321) This course consists of lectures, seminars and clinics, covering all aspects of oral and maxillofacial surgery with an emphasis on those procedures performed by the general practitioner.

**DDSS 3220** Periodontology 3 Cr.Hrs.6

(Formerly 103.322) This combined didactic and clinical course is designed to provide experience which will allow students to apply their earlier and current didactic learning to the clinical environment. The lecture periods concern themselves principally with verbal descriptions of treatment modalities and techniques, including non-surgical, surgical intervention and temporomandibular joint problems. Inter-relationships with other clinical disciplines also receives considerable attention.

**DDSS 3230** Pain and Anxiety Control 2 Cr.Hrs.6

(Formerly 103.323) This course consists of lectures/seminars and clinical experience in: physiology of pain and psychology of anxiety, management of medical emergencies, parenteral injections, and therapeutics of the various modalities of pain and anxiety control.

**DDSS 4130** Hospital Dentistry Cr.Hrs.6

(Formerly 103.413) This course is designed to provide the student with a familiarization with hospital protocol, reinforcement of understanding in medicine, surgery, pharmacology and therapeutics, the dental treatment of medically compromised patients at the Health Sciences Centre, and handicapped patients in other institutional settings. Course evaluated on a pass/fail basis.

**DDSS 4200** Oral Diagnosis and Radiology 2 Cr.Hrs.6

(Formerly 103.420) This clinical course is designed to give the student clinical experience with: treatment planning; diagnostic techniques, differential diagnosis, emergency treatment and non-surgical management related to oral pathologic conditions.

**DDSS 4210** Oral and Maxillofacial Surgery 2 Cr.Hrs.6

(Formerly 103.421) This course consists of lectures, seminars and clinics covering all aspects of oral and maxillofacial surgery with an emphasis on those procedures performed by the general practitioner.

**DDSS 7010** Biology and Pathology of the

## Periodontium Cr.Hrs.6

(Formerly 103.701) Selected topics in cell biology precedes a comprehensive and detailed survey of the periodontium, its constituent tissues and its function; the cell dynamics of inflammation and wound healing and the histopathology of the early and advanced periodontal lesion.

**DDSS 7050** Oral Medicine and Oral Diagnosis Cr.Hrs.3

(Formerly 103.705) This course provides the student, through clinical rotations, with the opportunity to enhance diagnostic and non-surgical management of oral pathologic conditions including mucosal and intrabony lesions, temporomandibular joint disorders, and oral manifestations of systemic disease in both otherwise healthy and medically compromised patients.

**DDSS 7120** Advanced Clinical Periodontics Cr.Hrs.4

(Formerly 103.712) This seminar course will review contemporary clinical periodontics by considering assigned readings in current texts and review articles. This course is intended to assure that students have a comprehensive overview of conventional periodontal therapy early in their education.

**DDSS 7130** Occlusion Cr.Hrs.3

(Formerly 103.713) A seminar series devoted to the

diagnosis, treatment planning and management of patients with craniomandibular disorders.

**DDSS 7150** Review of Periodontal Literature Cr.Hrs.6

(Formerly 103.715) This course will consider the concepts underlying the current practice of periodontics by reviewing assigned readings from the scientific literature. Students will be expected to apply principles of critical evaluation in order to identify and appreciate the limitations of these studies and thus the limitations of the current concepts derived from them.

**DDSS 7210** Clinical Practice in Periodontics Cr.Hrs.18

(Formerly 103.721) Designed to provide the clinical experience which is essential for specialty practice in Periodontics (circa 1600 hours).

**DDSS 7220** Essay/Research Project Cr.Hrs.3

(Formerly 103.722) An essay/research project is required for each student. It is selected in consultation with, and approved by the department head. This course is graded pass/fail.

**DDSS 7230** Advanced Oral Pathology Cr.Hrs.6

(Formerly 103.723) The four major etiopathogenic categories of diseases affecting the oral and paraoral structures are discussed with emphasis on common conditions and entities significant to various dental specialties. Lectures cover epidemiology, clinical and laboratory features and management principles with supplementation by seminars or laboratories.

**DDSS 7240** Advanced Oral and Maxillofacial Surgery

## Seminar 1 Cr.Hrs.3

(Formerly 103.724) This course includes a thorough review of the applied scientific basis for the practice of oral and maxillofacial surgery and emphasizes surgical anatomy and pathology, diagnosis and technique. Instruction will be given by means of lectures, seminars, case presentations and a critical review of current literature. Year I.

**DDSS 7250** Clinical Advanced Oral and Maxillofacial

## Surgery 1 Cr.Hrs.6

(Formerly 103.725) The first year of hospital residency includes training in history taking and physical diagnosis; hospital protocols and ward procedure; minor oral surgery procedures and pain control techniques; operating room procedures and general in-patient care. Year I.

**DDSS 7260** Advanced Oral and Maxillofacial Surgery

## Seminar 2 Cr.Hrs.3

(Formerly 103.726) Lectures, seminars, case presentations and reviews of current literature will emphasize the state of current knowledge regarding the clinical practice of advanced oral and maxillofacial surgery. Year 2.

**DDSS 7270** Clinical Advanced Oral and Maxillofacial

## Surgery 2 Cr.Hrs.6

(Formerly 103.727) The second year of the hospital residency training program includes training in minor oral surgery, including dento-alveolar, pre-prosthetic surgery and implantology. It also provides an introduction to advanced oral and maxillofacial surgery and maxillofacial imaging. A rotation to Internal Medicine is included. Year II.

**DDSS 7280** Clinical Advanced Oral and Maxillofacial

## Surgery 3 Cr.Hrs.6



(Formerly 103.728) The third year of the hospital residency training program includes rotations in Anaesthesia, Internal Medicine, General and Plastic Surgery, Surgical Intensive Care and Emergency Room. It also includes training in advanced oral and maxillofacial surgery. An elective rotation may also be arranged. Year III.

**DDSS 7290** Clinical Advanced Oral and Maxillofacial Surgery 4 Cr.Hrs.6

(Formerly 103.729) The fourth year of the hospital residency training program is devoted to advanced oral and maxillofacial surgery. The student is designated chief resident and assumes a greater degree of responsibility in patient care and administrative activities. Year IV.

**DDSS 7300** Dental Implantology Cr.Hrs.3

(Formerly 103.730) A seminar course devoted to providing an in-depth understanding of the basic and applied aspects of the placement of dental root form implants in humans. This course is a prerequisite to the actual surgical placement of implants undertaken in DDSS 7210 (or 103.721).

## SECTION 5.4 Preventive Dental Science

**PDS 3040** Orthodontics - 3 Cr.Hrs.6

(Formerly 101.304) A series of seminars covering the analysis, diagnosis, treatment planning, and mechanotherapy using records of selected cases. The clinical component consists of the diagnosis and treatment planning for individuals seeking orthodontic treatment. The clinical experience includes exposure to removable and fixed appliance mechanotherapy, screening of patients seeking orthodontic care and follow-up of retention of completed cases.

**PDS 3050** Pediatric Dentistry - 2 Cr.Hrs.6

(Formerly 101.305) A series of seminars and clinics to give the student a basic understanding and some clinical experience with: clinical procedures, emergency treatment, psychological management, preventive medical considerations and the provision of total dental care to pediatric patients.

**PDS 3140** Dental Public Health/Preventive Dental Science Cr.Hrs.6

(Formerly 101.314) (a) Dental Public Health The course focuses on the social and psychological variables that impact on dental care for specific age and disease-related issues in the population. Patient utilization rates and program organization are reviewed. Lectures: 15 hours. (b) Preventive Dental Science Techniques and therapy used to prevent dental diseases are covered. The application of these modalities to specific patient categories follows.

**PDS 4050** Pediatric Dentistry - 3 Cr.Hrs.6

(Formerly 101.405) This course consists of clinical experience including exposure to common pediatric dentistry problems, caries preventive and control procedures, routine conservative procedures and the dental treatment of children in community-based clinics.

**PDS 4060** Orthodontics - 4 Cr.Hrs.6

(Formerly 101.406) This course consists of seminars on special topics related to the provision of orthodontic therapy. In addition, the clinical component including the diagnosis and treatment planning for individuals seeking orthodontic treatment as well as the continuation of treatment

commenced in PDS 3040 (or 101.304). Clinical seminars cover the analysis, diagnosis, treatment planning, mechanotherapy and post-treatment evaluation of previously treated cases.

**PDS 4080** Community Dentistry Externship Cr.Hrs.6

(Formerly 101.408) This clinical program is centred in community clinics in Winnipeg and northern Manitoba. The clinics serve elderly, aboriginal, low income or northern patients. Health education seminars may be a requirement at some sites, prepared and delivered by the student interns. Course evaluated on a pass/fail basis.

**PDS 7000** Neural Basis of Oropharyngeal Function Cr.Hrs.3

(Formerly 101.700) A program of problem-oriented seminars on the sensory and reflex mechanisms affecting the respiratory and alimentary functions of the mouth and pharynx, mandibular posture and movement and respective application to oropharyngeal dysfunction and orthodontic therapy. One seminar per week for one term.

**PDS 7020** The Mechanics of Orthodontic Therapy Cr.Hrs.6

(Formerly 101.702) The mathematics of three dimensional space, force and moment systems are given as the basis for considering the mechanics of orthodontic treatment. The mechanical properties of some orthodontic materials are studied as a background for appliance design. The quantitative aspects of tooth movement are discussed in terms of patient treatment planning. Seminar and laboratory sessions.

**PDS 7030** Biological Basis of Craniofacial Growth and Development Cr.Hrs.3

(Formerly 101.703) A program of student-based seminars on the biophysical, biochemical and histological basis of growth and development of craniofacial structures.

**PDS 7040** Clinical Craniofacial Growth and Development Cr.Hrs.3

(Formerly 101.704) A program of student-based seminars on the morphogenesis of craniofacial structures and their significance to clinical problems.

**PDS 7060** Cephalometric Analysis Cr.Hrs.3

(Formerly 101.706) A seminar program on the application of cephalometric radiography to craniofacial morphological research, orthodontic diagnosis and case analysis.

**PDS 7070** Biology of Orthodontics and Facial Orthopedics Cr.Hrs.3

(Formerly 101.707) A program of student-based seminars and lectures on the biological basis of orthodontic and facial orthopedic diagnosis and therapeutic technique.

**PDS 7101** Preventive Programs in Pediatric Dentistry Cr.Hrs.3

This course will be offered during the second year (term III). The prerequisite for this course will be the completion of the required courses in the first year of the program. In clinical terms this course will be taught with the following courses: Management and Restorative Treatment of Pediatric Patients II. Course is evaluated on a pass/fail basis.

**PDS 7102** Hospital Pediatric Dentistry I Cr.Hrs.6

This course will be offered during the first year (term I and



II). The prerequisite for this course will be the dental degree obtained prior to applying to the program. In clinical terms this course will be taught with the following courses: Management and Restorative Treatment of Pediatric Patients I and Special Needs and Emergency care in Pediatric Patients. Course is evaluated on a pass/fail basis.

**PDS 7103 Hospital Pediatric Dentistry II Cr.Hrs.6**

This course will be offered during the first year (term III and IV). The prerequisite for this course will be completion of the required courses in the first year of the program. In clinical terms this course will be taught with the following courses: Management and Restorative Treatment of Pediatric Patients II and Preventive Programs in Pediatric Dentistry. Course is evaluated on a pass/fail basis.

**PDS 7104 Management and Restorative Treatment of Pediatric Patients I Cr.Hrs.6**

This course will be offered during the first year (term I and II). The prerequisite for this course will be the dental degree obtained prior to applying to the program. In clinical terms this course will be taught with the following courses: Hospital Pediatric Dentistry I and Preventive and Community Pediatric Dentistry. Course is evaluated on a pass/fail basis.

**PDS 7105 Management and Restorative Treatment of Pediatric Patients II Cr.Hrs.6**

This course will be offered during the second year (term III and IV). The prerequisite for this course will be the completion of the required courses in the first year of the program. In clinical terms this course will be taught with the following courses: Hospital Pediatric Dentistry II and Preventive Programs in Pediatric Dentistry. Course is evaluated on a pass/fail basis.

**PDS 7106 Preventive and Community Pediatric Dentistry Cr.Hrs.3**

This course will be offered during the first year (term I). The prerequisite for this course will be the dental degree obtained prior to applying to the program. In clinical terms this course will be taught with the following courses: Management and Restorative Treatment of Pediatric Patients I. Course is evaluated on a pass/fail basis.

**PDS 7107 Special Needs and Emergency Care in Pediatric Patients Cr.Hrs.3**

This course will be offered during the first year (term I). The prerequisite for this course will be the dental degree obtained prior to applying to the program. In clinical terms this course will be taught with the following courses: Management and Restorative Treatment of Pediatric Patients I and Hospital Pediatric Dentistry I. Course is evaluated on a pass/fail basis.

## SECTION 5.5 Restorative Dentistry

**RSTD 3020 Operative Dentistry - 3 Cr.Hrs.6**

(Formerly 102.302) A lecture and clinical course emphasizing diagnosis, treatment planning and the application of fundamental principles of operative and esthetic dentistry. Lectures and clinical treatments dealing with current restorative materials and techniques.

**RSTD 3040 Fixed Partial Denture Prosthesis - 2 Cr.Hrs.6**

(Formerly 102.304) An introduction to the clinical practice of fixed prosthodontic techniques. An emphasis is placed on diagnosis and treatment-planning. Clinical exposure is

supplemented by lecture materials.

**RSTD 3050 Endodontology - 2 Cr.Hrs.6**

(Formerly 102.305) This course emphasizes the rationale and biologic basis for the practical techniques previously taught. Techniques are discussed in greater detail and are applied to treatment of patients. The second part of the course deals with pulp biology and periapical pathology to prepare the student for understanding the rationale behind pulpal protection, prevention and treatment of pulpal disease. Laboratory exercises are performed on more complex root canal systems in preparation for General Practice Clinic.

**RSTD 3090 Complete and Removable Partial Denture Prosthesis Cr.Hrs.6**

(Formerly 102.309) This course consists of a series of lectures and clinics. Theories of applied prosthodontics are discussed and applications of this knowledge are made concurrently through the clinical treatment of patients.

**RSTD 4060 Endodontic Seminars Cr.Hrs.6**

(Formerly 102.406) Seminars designed to enhance the clinical endodontics experience with literature review of diagnosis, more complex treatment methods and materials, case selection and student evidence-based literature and case presentations.

**RSTD 4160 Dental Jurisprudence Cr.Hrs.6**

(Formerly 102.416) This course provides an overview of the Canadian legal system. It defines and discusses legal concepts relevant to dentistry including issues in negligence, contracts, confidentiality, business and human rights. Identifying a dentist's legal responsibilities to patients, peers, employees, profession and society will underlie the entire course.

**RSTD 4170 Practice Management Cr.Hrs.6**

(Formerly 102.417) The management, evaluation, economics, organization, design, location, selection and marketing of a dental practice are covered by lectures and seminars. In addition, ethical considerations of dental practice, the options available to new dental graduates and the role of professional associations are discussed.

**RSTD 7100 Dental Materials Cr.Hrs.6**

(Formerly 102.710) This course consists of lecture, seminar and laboratory periods. The student will examine the current literature relevant to the program and will gain experience in the testing procedures used to evaluate dental materials. A project involving the evaluation of a dental material will be required of each student.

**RSTD 7150 Orthodontic Materials Cr.Hrs.3**

(Formerly 102.715) Students will examine in depth through lectures, seminars and research of the current literature, those materials used by orthodontists in their clinical practice. The relationship between materials properties and clinical performance will be emphasized.



## Faculty of Education

**Dean:** Robert Macmillan

**Associate Dean(s):** David Mandzuk (Undergraduate), Zana Lutfiyya (Graduate & Professional Programs, and Research)

**Campus Address/General Office:** 203 Education Building

**Telephone:** (204) 474-9004

**Fax:** (204) 474-7551

**Website:** [umanitoba.ca/education](http://umanitoba.ca/education)

**Academic Staff:** Please refer to the Faculty website at [umanitoba.ca/faculties/education/directory/faculty-directory-index.html](http://umanitoba.ca/faculties/education/directory/faculty-directory-index.html)

## Student Services

**B. Ed. Programs (including Integrated Music/Education)**

**Telephone:** (204) 474-9004

**Fax:** (204) 474-7551

**E-mail:** [bachofed@umanitoba.ca](mailto:bachofed@umanitoba.ca)

**Website:** [umanitoba.ca/education](http://umanitoba.ca/education)

**Post Baccalaureate Diploma in Education (PBDE)**

**Telephone:** (204) 474-7886

**Fax:** (204) 474-7550

**E-mail:** [pbde@umanitoba.ca](mailto:pbde@umanitoba.ca)

**Website:** [umanitoba.ca/education](http://umanitoba.ca/education)

**Internationally Educated Teachers**

**Telephone:** (204) 474-7886

**Fax:** (204) 474-7550

**E-mail:** [pbde@umanitoba.ca](mailto:pbde@umanitoba.ca)

**Website:** [umanitoba.ca/education](http://umanitoba.ca/education)

**Graduate Studies in Education**

**Telephone:** (204) 474-7886

**Fax:** (204) 474-7550

**E-mail:** [edgradpr@umanitoba.ca](mailto:edgradpr@umanitoba.ca)

**Website:** [umanitoba.ca/education](http://umanitoba.ca/education)

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## SECTION 1: Programs

### 1.1 Department of Education,

Program/Degree	Years to Complete	Total Credit Hours
Bachelor of Education	* 2	60
Bachelor of Music/Bachelor of Education	** 5	174-177
Post Baccalaureate Diploma in Education	*1	30

\* Requires previous degree for entry. \*\* This includes two years (67 credit hours) of study in the Marcel A. Desautels Faculty of Music.

The educational objective of the Faculty of Education is to prepare students for a career in the teaching profession. Attaining the B.Ed. degree leads to professional certification by Manitoba Education and the opportunity to attain initial employment as a classroom teacher in Manitoba and elsewhere. Those desiring other roles in education can achieve the professional requirements via the Post Baccalaureate Diploma in Education (PBDE) or graduate degrees in education (M.Ed. or Ph.D.).

#### 1.1.1 After Degree Bachelor of Education: Early Years, Middle Years (Including a Weekend College Middle Years Scheduling Option) and Senior Years

Following a first degree, the After-Degree Bachelor of Education program consists of 60 credit hours (two years) of course work taken within the Faculty of Education and leads to general certification and a Bachelor of Education degree. The Weekend College Middle Years scheduling option takes three years of study to complete 60 credit hours. Unless otherwise stated, the Weekend College scheduling option follows the same regulations as Middle Years. The Faculty anticipates an intake to the Weekend College Middle Years Scheduling Option every three years (subject to enrolment). The next proposed intake will be September 2014. Current certification requirements for the Province of Manitoba require 24 weeks of practicum which are completed as part of the 60 credit hours required for the Bachelor of Education degree.

#### 1.1.2 Bachelor of Music/Bachelor of Education Integrated

A program leading to general certification and preparing of teachers for specialist Music and classroom teaching. Both degrees are awarded upon completion of the program.

#### 1.1.3 Post Baccalaureate Diploma in Education (PBDE)

Designed for teacher professional development, the PBDE is a 30 credit hour program following the completion of an undergraduate degree, normally a B.Ed.

#### 1.1.4 Certificate in Adult and Continuing Education (CACE)

The following four courses in addition to 100 hours in elective courses offered through Extended Education completes a Certificate in Adult and Continuing Education (CACE). For further information contact Sandra Stechisen at (204) 474-6685 or [Sandra.stechisen@umanitoba.ca](mailto:Sandra.stechisen@umanitoba.ca).

EDUA 1560 Adult Learning and Development

EDUA 1570 Foundations of Adult Education

EDUA 1580 Program Planning in Adult Education

EDUA 1590 Facilitating Adult Education

#### 1.1.5 Certificate in Teaching English as a Second Language (CTESL)

Extended Education, in collaboration with the Faculty of Education, offers a 15 credit hour (200 hour) Certificate in Teaching English as a Second Language. Education students may take courses in this program to fulfil Education complementary course requirements of their B.Ed. CTESL courses include: EDUB 1620 Principles and Procedures of Second Language Teaching (3), EDUB 1640 Teaching ESL Vocabulary and Pronunciation (3), EDUB 1650 Teaching ESL Grammar (3), EDUB 1660 Computers in Second Language Teaching (3), EDUB 1604 Academic and Professional English for Multilingual Teachers, EDUB 1820 Language and Content Instruction of ESL/ Bilingual Students (3), EDUB 1606 Teaching ESL Foundational Literacy, Academics & Language (LAL) Students (3), EDUB 1608 Assessment & Testing of EAL/ESL Learners (3), EDUB 1860 Practicum in Teaching English as a Second Language (TESL) (3) and additional Special Topics courses as approved. For further information, contact Heather McIntosh, (204) 474-9861, [mcintos1@ms.umanitoba.ca](mailto:mcintos1@ms.umanitoba.ca).



### 1.1.6 Internationally Educated Teachers

See PBDE (see 1.1.3 above).

### 1.1.7 Special Students

The Faculty of Education does not normally admit students to this category.

### 1.1.8 Students Enrolled in Other Faculties/Schools

Students currently enrolled in other faculties/schools at the University of Manitoba may take Education complementary courses (see Section 7). Students who hold a recognized degree from an accredited institution may also take 5000-level courses, however, students must obtain permission by completing the form 'PBDE & Graduate Permission Slip' available at website [umanitoba.ca/education/current/index.shtml](http://umanitoba.ca/education/current/index.shtml) or from Room 227 Education Building. These courses cannot be applied towards a B.Ed. degree or Integrated B.Mus./B.Ed. degrees.

### 1.2 Professional Teacher Certification Requirements for Manitoba Education,

During the final year of the B.Ed. degree, the university will provide a list of potential Bachelor of Education graduates to the Professional Certification Unit, Manitoba Education and make a recommendation that they be granted the Professional Certificate which is permanent and entitles the holder to teach any subject at any level (K-12) in Manitoba. Students are required to apply for certification. The application form and specific requirements for certification can be found online at [www.edu.gov.mb.ca/k12/profcert/bedgradap.html](http://www.edu.gov.mb.ca/k12/profcert/bedgradap.html).

## SECTION 2: Faculty of Education Programs

### 2.1 After Degree Bachelor of Education,

The Bachelor of Education program is a two year program following the completion of a first bachelor's degree of at least 90 credit hours (three years in duration). See [admission requirements](#) for detailed information.

### 2.2 Integrated Degrees: Bachelor of Music/Bachelor of Education,

The Marcel A. Desautels Faculty of Music offers a degree program that integrates the requirements of its degree program with those of the Faculty of Education. See [sections 1 and 4 of the chapter for the Marcel A. Desautels Faculty of Music](#) for information. The integrated programs are five years in length. Students are awarded both degrees upon completion.

### 2.3 Post Baccalaureate Diploma in Education ,

Designed for teacher professional development, the Post Baccalaureate Diploma in Education is a 30 credit hour program following completion of a Bachelor's degree, normally a B.Ed.

### 2.4 Visiting Students,

See the chapter, [Registration and Fees](#), of this *Calendar* and contact the [Student Services Office, Faculty of Education](#), for admission procedure.

## SECTION 3: After-Degree Bachelor of Education

### 3.1 Admission Requirements , Early and Middle Years

A recognized bachelor's degree of a minimum of 90 credit hours and the requirements for two different teachable subjects plus a breadth component as follows:

- 18 credit hours in a teachable major,
- 12 credit hours in a teachable minor,
- 6 credit hours English or French literature,
- 6 credit hours Social Studies (History or Geography),
- 9 credit hours Mathematics (or Statistics) and Science (Biology, Chemistry, Environmental Science, Geology or Physics).

### Senior Years

A recognized bachelor's degree of a minimum of 90 credit hours and the requirements for two different teachable subjects:

- 30 credit hours in a teachable major,
- 18 credit hours in a teachable minor,

### Other requirements (currently under review)

Minimum admission GPA for consideration: 2.50 on university coursework with a minimum grade of C in each teachable major/minor course and in breadth component coursework, if required. The admission GPA is calculated on the most recent 30 credit hours of university coursework available at February 1 of admission year.

- Experience profile and writing skills exercise.
- References and a criminal record self-declaration.

Selection criteria: 69.0% on GPA; and 31.0% on writing skills.

To be eligible for this program, applicants must have a conferred bachelor's degree and teachable courses at the 1000 level or higher completed from a recognized institution by May of the year of application.

The Weekend College Middle Years scheduling option may not admit students each year; the next intake of students is anticipated for September, 2014.

### Special Consideration Category (currently under review)

The Faculty of Education has a Special Consideration Category. The Faculty recognizes the importance of providing the highest quality of education to all students in Manitoba via a teaching force that is fully representative of the cultural, ethnic and racial diversity of the province.



As the largest teacher education institution in the province, the Faculty recognizes its responsibility to facilitate the development of such a teaching force.

Furthermore, the Faculty recognizes the need to ensure that its recruitment and admission policies and procedures do not inappropriately obstruct the achievement of such a goal, but rather actively promote its attainment.

In keeping with the above, the Faculty will admit up to 10 percent of the After Degree B.Ed. applicants under this category. The Special Consideration Category includes: Canadian Aboriginal peoples, members of a visible minority or persons with disabilities.

*Canadian Indigenous/Aboriginal Peoples* – An Indigenous/Aboriginal person is a member of a Canadian First Nation, Métis, or Inuit Community.

*Visible Minority* – Persons other than Aboriginal Peoples who, because of their colour, are a visible minority in Canada.

*Persons with Disabilities* – Persons with disabilities are those who would consider themselves disadvantaged by reason of any physical, intellectual, mental, sensory or learning impairment.

Information on admission within this category is included in the admissions bulletin.

All admission requirements are described in detail in an admissions bulletin that includes application deadline dates and application forms. This material is available from the Faculty of Education, 225 Education Building, or Enrolment Services, 424 University Centre or their website at: [umanitoba.ca/student/admissions/application/deadlines/education/](http://umanitoba.ca/student/admissions/application/deadlines/education/).

The detailed admission information is also posted on the university website. The criteria outlined in this section are applicable for 2012-2013 session only. Please refer to the Faculty website for updates to the admission criteria for subsequent sessions.

**Early Years (Kindergarten - Grade 4) and Middle Years (Grades 5 – 8)**

**NOTE:** Potential applicants in the process of completing their first degree are advised that meeting the teachable major and minor requirements and the breadth coursework for Education may not meet the requirements for a first degree in their home faculty. Applicants are advised to consult the chapter of this *Calendar* for their current faculty.

In addition to a bachelor's degree and two different teachable subject areas, all applicants must present a breadth of coursework that includes English/ French Literature – 6 credit hours; Social Studies (History or Geography) – 6 credit hours; Mathematics (Mathematics or Statistics) and Science (Biology, Chemistry, Geology, Environmental Science, or Physics) – 9 credit hours with a minimum 3 credit hours from Mathematics and a minimum 3 credit hours from Science. A minimum grade of "C" is required in courses fulfilling the breadth component.

Teachable Subject	Major (18 credit hours)	Minor (12 credit hours)	Major/Minor Notes
Anthropology		X	
Art	X	X	Early Years: no specific course requirements  Middle Years: 12 credit hours of studio courses for a major or 9 credit hours of studio courses for a minor
Classics		X	
Computer Science <b>(Middle Years only)</b>	X	X	Note: This teachable area is available to Middle Years applicants only
Dance		X	
Developmental Studies (Family Studies and Developmental Psychology)		X	Note: A list of applicable University of Manitoba courses can be found on the Faculty website under Future Students.
Earth Science (Geological Science)		X	
Economics		X	
English (Language Arts)	X	X	
Environmental Science (Environmental Studies)		X	
French	X	X	
General Science	X		Must include 3 (only) separate Science disciplines with at least 3 credit hours at the



			2000 level or above. A minimum of 3 credit hours is required in each of the 3 disciplines.
Geography	X	X	6 credit hours of Canadian or North American Geography are required in the major or minor
History	X	X	6 credit hours of Canadian or North American History are required in the major or minor
Human Ecology (Home Economics) <b>(Middle Years only)</b>	X	X	Note: This teachable area is available to Middle Years applicants only
Law		X	
Mathematics	X	X	Major or minor may include combinations of courses from the departments of Mathematics and Statistics (with a minimum of 6 credit hours at the 2000-level or above)
Music	X	X	Early Years: no specific course requirements  Middle Years: (Choral) or Music (Early/Middle) or Music (Instrumental) see specialization under Section 4.3 for specific course requirements
Native Studies	X	X	May include 6 credit hours of a Native Language course
Philosophy		X	
Physical Education	X	X	Physical Education courses at the University of Manitoba identified with department designation PHED are acceptable for this teachable area (including former Department 057 or equivalent courses).
Political Science (Political Studies)		X	
Psychology		X	
Second Language	X	X	Major or minor in a language other than English or French
Sociology		X	
Drama/Theatre	X	X	

**Senior Years (Grades 9 – 12)**

Applicants must have two different teachable subjects; one Major and one Minor. See table below.

**NOTE:** Potential applicants in the process of completing their first degree are advised that meeting the teachable major/minor requirements for Education may not meet the requirements for a first degree in their home faculty. Applicants are advised to consult the chapter in this *Calendar* for their current faculty.

Teachable Subject	Major (30 credit hours)	Minor (18 credit hours)	Major/Minor Notes
Art	X	X	Applicants must possess a minimum of 18 credit hours of studio courses for a major or 12 credit hours of studio courses for a minor
Biology	X	X	
Chemistry	X	X	



Computer Science	X	X	
English (Language Arts)	X	X	
French	X	X	
General Science	X	X	<p><b>Major:</b> Must include 2 (only) separate Science disciplines with at least 3 credit hours of coursework at the 3000 level or above. A minimum of 3 credit hours is required from each of the 2 disciplines.</p> <p><b>Minor:</b> Must include 2 (only) separate Science disciplines with at least 6 credit hours of coursework at the 2000 level or above. A minimum of 3 credit hours is required from each of the 2 disciplines.</p>
Geography	X	X	
History	X	X	
Human Ecology (Home Economics)	X	X	
Mathematics	X	X	Major or minor may include combinations of courses from the departments of Mathematics and Statistics (with a minimum of 6 credit hours at the 2000-level or above)
Music (Choral) or Music (Instrumental)	X	X	see specialization under Section 4.3 for specific course requirements
Native Studies	X	X	May include 6 credit hours of a Native Language course
Physical Education	X	X	Physical Education courses at the University of Manitoba identified with department designation PHED are acceptable for this teachable area (including former Department 057 or equivalent courses).
Physics	X	X	
Second Language	X	X	Major or minor in languages other than English or French
Drama/Theatre	X	X	

### 3.1.1 Criminal Records and Child Abuse Registry

The Minister of Education for the Province of Manitoba requires that background checks be conducted on all candidates for teacher education in Manitoba and on all applications for certification for this province. Accordingly, all applicants offered admission to Bachelor of Education programs will be required to complete the "Child Abuse Registry & Statement of Criminal Record(s) Self-Declaration" form as a condition of final acceptance to the program. Only adult convictions must be disclosed, and the existence of such a record will not automatically exclude applicants.

In addition to the above self-declaration all successful applicants will be conditionally admitted pending clearance of an official Criminal Record Search (including Vulnerable Sector search) and clearance from the Child Abuse Registry. Registration will not be permitted until these clearances are received. Failure to clear or failure to provide these

documents by the stated deadline will result in admission offer being revoked.

Applicants should also be aware that the Professional Certification Unit will also require students graduating from the Bachelor of Education program to undergo a criminal record check, including vulnerable sector screening as part of the certification process. Information on the "Child Abuse Registry & Statement of Criminal Record(s) Self-Declaration" is included in the admission bulletin available from the Enrolment Services/Admissions, 424 University Centre and the website:  
[umanitoba.ca/student/admissions/application/education/](http://umanitoba.ca/student/admissions/application/education/).

### 3.2 Admission Procedure,

Application forms are available online at [umanitoba.ca/student/admissions/application/education](http://umanitoba.ca/student/admissions/application/education). Completed applications with supporting documentation must be submitted by February 1.



### 3.3 Program Requirements,

**REMINDER:** While Education academic advisors are available to clarify faculty and university regulations and degree requirements, it is the student's responsibility to ensure that degree and program requirements are met.

All continuing students are required to complete and submit a "Child Abuse Registry & Statement of Criminal Record(s) Self-Declaration" form prior to registration for every year they are enrolled in the Bachelor of Education program.

Returning students planning to take School Experience (EDUB 1960, EDUB 1970, EDUB 1980, EDUB 2960, EDUB 2970, or EDUB 2980) during the upcoming Regular Session must make application for a School Placement no later than February 1. Forms will be available from the Student Services Office, Room 225 Education Building, Faculty of Education, beginning December 15. Failure to apply for School Placement by February 1 may result in students being denied a placement.

#### Early Years: Year 1

Course No.		Credit Hours
EDUB 1000	Early Years Philosophy and Practice 1	1
EDUB 1010	Early Years Curriculum and Instruction in Language and Literacy 1	3
EDUB 1020	Early Years Curriculum and Instruction in Music and Movement 1	1
EDUB 1030	Early Years Curriculum and Instruction in Art and Drama 1	2
EDUB 1040	Early Years Curriculum and Instruction in Social Studies 1	1
EDUB 1050	Early Years Curriculum and Instruction in Mathematics 1	2
EDUB 1060	Early Years Curriculum and Instruction in Science and Health 1	2
EDUB 1960	Early Years School Experience 1	6
EDUB 1990	Teacher and Technology	3
EDUA 1800	Psychology of Learning and Instruction 1: Theory and Practice	3
EDUA 1810	School and Society 1: The Social Foundations of Education	3
EDUA/EDUB	Aboriginal Education or Special Education/Diversity*	3
Total credit hours		30

#### Early Years: Year 2

EDUB 2000	Early Years Philosophy and Practice 2	1
EDUB 2010	Early Years Curriculum and Instruction in Language and Literacy 2	3
EDUB 2020	Early Years Curriculum and Instruction in Music and Movement 2	2
EDUB 2030	Early Years Curriculum and Instruction in Art and Drama 2	1
EDUB 2040	Early Years Curriculum and Instruction in Social Studies 2	2
EDUB 2050	Early Years Curriculum and Instruction in Mathematics 2	2
EDUB 2060	Early Years Curriculum and Instruction in Science and Health 2	2
EDUB 2070	Early Years Curriculum and Instruction Children's Literature	1
EDUB 2080	Early Years Multi-Language Development	1
EDUB 2960	Early Years School Experience 2	6
EDUA 2800	Psychology of Learning and Instruction 2: Inclusive Special Education	3
EDUA 2810	School and Society 2: The Administrative Foundations of Education	3
EDUA/EDUB	Aboriginal Education or Special Education/Diversity*	3
Total credit hours		30

\* 3 credit hours Aboriginal Education (EDUA 1500 Aboriginal Education or EDUB 1602 Aboriginal Perspectives and the Curriculum) and 3 credit hours Special Education/Diversity (EDUA 1540 Cross Cultural Education, EDUB 1620 Principles and Procedures of Second Language Teaching, EDUB 1820 Language and Content Instruction of ESL/Bilingual Students or EDUB 1830 - La pédagogie du français de base aux niveaux intermédiaire et de la jeune enfance) must be completed within the B.Ed. Program.

#### Middle Years: Year 1

EDUB 1100	Introduction to Teaching Language Arts in the Middle Years	3
EDUB 1110	Introduction to Teaching Social Studies in the Middle Years	1
EDUB 1120	Teaching Drama in the Middle Years	1
EDUB 1130	Introduction to Teaching Science in the Middle Years	1
EDUB 1140	Introduction to Teaching Mathematics in the Middle Years	3
EDUB 1970	Middle Years School Experience 1	3
EDUB 1990	Teacher and Technology	3
EDUA 1800	Psychology of Learning and Instruction 1: Theory and Practice	3
EDUA 1810	School and Society 1: The Social Foundations of Education	3
EDUA 2800	Psychology of Learning and Instruction 2: Inclusive Special Education	3
EDUA 2810	School and Society 2: The Administrative Foundations of Education	3
EDUA/EDUB	Aboriginal Education or Special Education/Diversity*	3
Total credit hours		30

#### Middle Years: Year 2

EDUB 2100	Teaching Language Arts in the Middle Years	3
EDUB 2110	Teaching Social Studies in the Middle Years	3
EDUB 2120	Teaching Art in the Middle Years	2



EDUB 2130	Teaching Science in the Middle Years	3
EDUB 2140	Teaching Mathematics in the Middle Years	3
EDUB 2150	Teaching Physical Education in the Middle Years	2
EDUB 2400	Teaching in the Middle Years	2
EDUB 2970	Middle Years School Experience 2	9
EDUA/EDUB	Aboriginal Education or Special Education/Diversity*	3
Total credit hours		30

\* 3 credit hours Aboriginal Education (EDUA 1500 Aboriginal Education or EDUB 1602 Aboriginal Perspectives and the Curriculum) and 3 credit hours Special Education/Diversity (EDUA 1540 Cross Cultural Education, EDUB 1620 Principles and Procedures of Second Language Teaching, EDUB 1820 Language and Content Instruction of ESL/Bilingual Students or EDUB 1830 - La pédagogie du français de base aux niveaux intermédiaire et de la jeune enfance) must be completed within the B.Ed. Program.

### Weekend College Middle Years Scheduling Option

Classes are held on Saturdays (9:00am-4:00pm) and Wednesday evening (5:30pm-8:30pm). Over the three years of the program, students must spend a total of 24 weeks in schools during regularly scheduled school hours to complete their School Experience requirements. Scheduling and sequence of course offerings are subject to change.

#### Year 1

EDUB 1970	Middle Years School Experience 1 (Two separate blocks - 2 weeks & 4 weeks)	3
EDUB 1990	Teacher and Technology	3
EDUB 1100	Introduction to Teaching Language Arts in the Middle Years	3
EDUB 1110	Introduction to Teaching Social Studies in the Middle Years	1
EDUB 1120	Teaching Drama in the Middle Years	
EDUB 1130	Introduction to Teaching Science in the Middle Years	1
EDUB 1140	Introduction to Teaching Mathematics in the Middle Years	3
EDUA 1800	Psychology of Learning and Instruction 1: Theory and Practice	3
EDUA 1810	School and Society 1: The Social Foundations of Education	3
Total Credit Hours		21

#### Year 2

EDUB 2110	Teaching Social Studies in Middle Years	3
EDUB 2120	Teaching Art in the Middle Years	2
EDUB 2970	Middle Years School Experience 2 (Two separate blocks - 4 weeks & 4 weeks)	9
EDUB 2100	Teaching Language Arts in the Middle Years	3
EDUB 2140	Teaching Mathematics in the Middle Years	3
EDUA 2800	Psychology of Learning and Instruction 2: Inclusive Special Education	3
EDUA/EDUB	Aboriginal Education or Special Education/Diversity*	3
Total Credit Hours		26

**NOTE:** EDUB 2970 Middle Years School Experience continues into year three.

#### Year 3

EDUB 2130	Teaching Science in Middle Years	3
EDUB 2970	Middle Years School Experience 2 (Two separate blocks - 1 week & 4 weeks)	
EDUB 2400	Teaching in the Middle Years	2
EDUB 2150	Teaching Physical Education in the Middle Years	2
EDUB 2970	Middle Years School Experience 2 (Third block - 5 weeks)	
EDUA 2810	School and Society 2: The Administrative Foundations of Education	3
EDUA/EDUB	Aboriginal Education or Special Education/Diversity*	3
Total Credit Hours		13

\* 3 credit hours Aboriginal Education (EDUA 1500 Aboriginal Education or EDUB 1602 Aboriginal Perspectives and the Curriculum) and 3 credit hours Special Education/Diversity (EDUA 1540 Cross Cultural Education, EDUB 1620 Principles and Procedures of Second Language Teaching, EDUB 1820 Language and Content Instruction of ESL/Bilingual Students or EDUB 1830 - La pédagogie du français de base aux niveaux intermédiaire et de la jeune enfance) must be completed within the B.Ed. Program.

#### Senior Years: Year 1

Curriculum and Instruction (select two from the following - one for the teachable Major and one for the teachable Minor) 6

**NOTE:** Students with a major/minor combination of History/Geography/ Native Studies; Art/Music/Theatre; or any two of the Sciences, will complete three credit hours of Curriculum and Instruction courses for their major/minor and 3 credit hours of a complementary education course of their choosing. EDUB 1800 Recent Developments in Learning and Teaching Senior Years Mathematics is a pre- or co-requisite for the Curriculum and Instruction course EDUB 1250 Teaching Mathematics in Seniors Years 1.

EDUB 1200	Teaching the Arts in Senior Years for (Art, Music and Theatre teachable majors and minors)	3
EDUB 1210	Teaching English Language Arts in Senior Years 1	3



EDUB 1230	Teaching Social Studies in Senior Years (for History, Geography and Native Studies teachable majors and teachable minors)	3
EDUB 1240	Teaching Human Ecology in Senior Years 1	3
EDUB 1250	Teaching Mathematics in Senior Years 1	3
EDUB 1260	Teaching Physical Education/Health Education in Senior Years 1	3
EDUB 1270	Teaching Senior Years Science (for Biology, Chemistry, Computer Science, General Science and Physics teachable majors and teachable minors)	3
EDUB 1280	L'Enseignement du Français de Base au Niveau Secondaire 1	3
EDUB 1350	Teaching a Heritage, Aboriginal or International Language 1 and <i>all of the following</i> :	3
EDUB 1500	Education in the Senior Years	3
EDUB 1510	Principles and Processes of Teaching	3
EDUB 1980	Senior Years School Experience 1	6
EDUB 1990	Teacher and Technology	3
EDUA 1800	Psychology of Learning and Instruction 1: Theory and Practice	3
EDUA 1810	School and Society 1: The Social Foundations of Education	3
	Complementary Course * (see note at end of Year 2 regarding Aboriginal Education or Special Education/Diversity)	3
Total credit hours		30

**Senior Years: Year 2**

Curriculum and Instruction (select two from the following: one for the teachable Major and one for the teachable Minor) 6

Courses EDUB 2250 Teaching Drama and Theatre in Senior Years, EDUB 2270 Teaching Chemistry in Senior Years, EDUB 2320 Teaching Physics in Senior Years, EDUB 2330 Teaching Computer Science in Senior Years, EDUB 1240 and 2290 Teaching Human Ecology in Senior Year I and II, and EDUB 1350 and 2350 Teaching a Heritage, Aboriginal or International Language I and II are offered every second year. In the years the courses are offered, Year 1 students must take both the Year 1 and Year 2 courses.

EDUB 1602	Aboriginal Perspectives and the Curriculum	3
EDUB 2200	Teaching Art in Senior Years	3
EDUB 2210	Teaching English Language Arts in Senior Years 2	3
EDUB 2220	Teaching Geography in Senior Years	3
EDUB 2230	Teaching History in Senior Years	3
EDUB 2240	Teaching Music in Senior Years	3
EDUB 2250	Teaching Drama and Theatre in Senior Years	3
EDUB 2260	Teaching Biology in Senior Years	3
EDUB 2270	Teaching Chemistry in Senior Years	3
EDUB 2280	Teaching General Science in Senior Years	3
EDUB 2290	Teaching Human Ecology in Senior Years 2	3
EDUB 2300	Teaching Mathematics in Senior Years 2	3
EDUB 2310	Teaching Physical Education/Health Education in Senior Years 2	3
EDUB 2320	Teaching Physics in Senior Years	3
EDUB 2330	Teaching Computer Science in Senior Years	3
EDUB 2340	L'Enseignement du Français de Base au Niveau Secondaire 2	3
EDUB 2350	Teaching a Heritage, Aboriginal or International Language 2 and <i>all the following</i> :	3
EDUB 2500	Themes in Senior Years Education	3
EDUB 2510	Language and Literacy Across the Curriculum	3
EDUB 2980	Senior Years School Experience 2	6
EDUA 2800	Psychology of Learning and Instruction 2: Inclusive Special Education	3
EDUA 2810	School and Society 2: The Administrative Foundations of Education	3
	Complementary Course * (see note at end of Year 2 regarding Aboriginal Education or Special Education/Diversity)	6
Total credit hours		30

\* 3 credit hours Aboriginal Education (EDUA 1500 Aboriginal Education or EDUB 1602 Aboriginal Perspectives and the Curriculum) and 3 credit hours Special Education/Diversity (EDUA 1540 Cross Cultural Education, EDUB 1620 Principles and Procedures of Second Language Teaching, EDUB 1820 Language and Content Instruction of ESL/Bilingual Students or EDUB 1830 - La pédagogie du français de base aux niveaux intermédiaire et de la jeune enfance) must be completed within the B.Ed. Program.

**SECTION 4: Bachelor of Music/Bachelor of Education Integrated**

**4.1 Admission Requirements,**

Successful completion of second year in the Marcel A. Desautels Faculty of Music with a minimum Degree Grade Point Average of 2.50 and be in good academic standing in the Faculty by May 1<sup>st</sup> of year of application is required for



admission. Applicants are required to complete a “Child Abuse Registry & Statement of Criminal Record(s) Self-Declaration” form (see [Section 3.1.1](#), Criminal Records and Child Abuse Registry).

In addition to the above self-declaration all successful applicants will be conditionally admitted pending clearance of an official Criminal Record Search (including Vulnerable Sector search) and clearance from the Child Abuse Registry. Failure to clear or failure to provide these documents by the stated deadline will result in admission offer being revoked.

#### Other Requirements

- Experience profile and writing skills exercise.
- References and a criminal record self-declaration.

Selection criteria: 69.0% on GPA; and 31.0% on writing skills.

#### 4.2 Admission Procedure,

Application forms are available from the [Admissions Office](#), Enrolment Services, 424 University Centre, Faculty of Education Student Services Office, Room 225, Education Building or Marcel A. Desautels Faculty of Music General Office. The completed application must be returned to Enrolment Services by February 1.

#### 4.3 Program Requirements,

**REMINDER:** While Education academic advisors are available to clarify faculty and university regulations and

degree requirements, it is the student’s responsibility to ensure that degree and program requirements are met.

All continuing students will be required to complete and submit a “Child Abuse Registry & Statement of Criminal Record(s) Self-Declaration” form prior to registration for every year they are enrolled in the Bachelor of Education program.

Students choose a specialization in Music (Choral, Early/Middle, or Instrumental) for their teachable major and a subject other than Music from the Senior Years selection for their teachable minor (See [Senior Years teachable major/minor chart in section 3](#) of this *Calendar*).

Students planning to take School Experience (EDUB 1940, EDUB 1950) during Summer Session must make application for a School Placement no later than November 1. Forms will be distributed or available for pick up in mid-October. Failure to apply for School Placement by November 1 may result in students being denied a placement.

Students planning to take EDUB 2980 School Experience during the upcoming Regular Session must make application for a School Placement no later than February 1. Forms will be available from the [Student Services Office](#), Room 225 Education Building, Faculty of Education, beginning December 15. Failure to apply for School Placement by February 1 may result in students being denied a placement.

#### Year 1: Marcel A. Desautels Faculty of Music

MUSC 1070 Introduction to the History of Music	3
MUSC 1080 History of Music 2	3
MUSC 1110 Music Theory 1	3
MUSC 1120 Music Theory 2	3
MUSC 1180 Ensemble	2
MUSC 1190 Ensemble	2
MUSC 1380 Basic Musical Skills 1	2
MUSC 1390 Basic Musical Skills 2	2
MUSC 1400 Major Practical Study	6
ENGL 1XXX English (Any Course Meeting Written English Requirement)	3
MUSC 3230 Acoustics of Music (Meets Mathematics Requirement)	3
Total credit hours	32

#### Year 2: Marcel A. Desautels Faculty of Music

MUSC 2070 History of Music 3	3
MUSC 2080 History of Music 4	3
MUSC 2110 Music Theory 3	3
MUSC 2120 Music Theory 4	3
MUSC 2180 Ensemble	2
MUSC 2190 Ensemble	2
MUSC 2380 Basic Musical Skills 3	2
MUSC 2390 Basic Musical Skills 4	2
MUSC 2400 Major Practical Study	6
MUSC 2460 Conducting	3
Teachable Minor*	6
Total credit hours	35

**NOTE:** Apply to Faculty of Education, Integrated Program during Year 2. Deadline date to apply is February 1.

#### Year 3: Faculty of Education/Music Program



MUSC 3180 Ensemble	2
MUSC 3190 Ensemble	2
MUSC 3470 Major Practical Study	6
MUSC 3960 Music of the 20th Century 1	3
MUSC XXXX Music Specialization	6
EDUB 1200 Teaching the Arts in Senior Years	3
EDUB 1600 Teaching General Music	3
Teachable Minor*	6
Total credit hours	31
<b>Summer Session</b>	
EDUB 1940 Integrated Programs School Experience 1	3
<b>Year 4: Faculty of Education/Music Program</b>	
MUSC 3970 Music of the 20th Century 2	3
MUSC 4180 Ensemble	2
MUSC 4190 Ensemble	2
MUSC 4470 Major Practical Study	6
EDUB 2240 Teaching Music in Senior Years	3

or <sup>1</sup>

EDUB 2160 Teaching Music in Early/Middle Years	3
<sup>1</sup> Students with Instrumental & Choral Specializations will take EDUB 2240 and students with Early/Middle Specialization will take EDUB 2160	
MUSC XXXX Music Specialization	12
Teachable Minor*	6
Total credit hours	34

**Summer Session**

EDUB 1950 Integrated Programs School Experience 2	3
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\*\* Prior to beginning Year 5 all students must have completed the Aboriginal Education Requirement and the Special Education/Diversity Requirement which is defined as 3 credit hours Aboriginal Education (EDUA 1500 Aboriginal Education or EDUB 1602 Aboriginal Perspectives and the Curriculum) and 3 credit hours Special Education/Diversity (EDUA 1540 Cross Cultural Education, EDUB 1620 Principles and Procedures of Second Language Teaching, EDUB 1820 Language and Content Instruction of ESL/Bilingual Students or EDUB 1830 La pédagogie du français de base aux niveaux intermédiaire et de la jeune enfance).

**Year 5: Faculty of Education/Music Program**

EDUB 2980 Senior Years School Experience	6
EDUA 1800 Psychology of Learning and Instruction 1: Theory and Practice	3
EDUA 1810 School and Society 1: The Foundations of Education	3
EDUB 1990 Teacher and Technology	3
EDUA 2800 Psychology of Learning and Instruction 2: Inclusive Special Education	3
EDUA 2810 School and Society 2: The Administrative Foundations of Education	3
EDUB 2500 Themes in Senior Years Education (for Early/Middle Years specialization, students take a 3 credit hour Education complementary course)	3
EDUB 2510 Language and Literacy Across the Curriculum (for Early/ Middle Years specialization, students take a 3 credit hour Education complementary course)	3
EDUB 1XXX Choral or Instrumental Specialization: Year 1 Curriculum & Instruction course for minor (see Senior Years: Year 1 - section 3.3)	3

or

Early/Middle Specialization: EDUB 1614

Total credit hours	30
Total Program hours	174

Students who complete the above program of studies satisfactorily receive a Bachelor of Music degree and a Bachelor of Education degree. Students are expected to maintain academic standards consistent with the granting of the degrees in non-integrated programs.

\*For listing of teachable minors, see [Senior Years teachable major/minor chart in section 3.](#)

**Specialization: Instrumental Music**

MUSC 3690 Percussion Techniques	3
MUSC 3780 Woodwind Techniques	3
MUSC 3790 Brass Techniques	3
MUSC 3880 Jazz Ensemble Techniques	3
MUSC 4770 Band and Orchestral Techniques 1	3



MUSC 4780	Band and Orchestral Techniques 2	3
Total credit hours		18
<b>Specialization: Choral Music</b>		
MUSC 3770	Vocal Techniques	3
MUSC 3880	Jazz Ensemble Techniques	3
MUSC 4150	Choral Repertoire	3
MUSC 4750	Choral Techniques 1	3
MUSC 4760	Choral Techniques 2	3
	Music Education Elective	3
Total credit hours		18
<b>Specialization: Early/Middle Years Music</b>		
MUSC 3130	Music for Children 1	6
MUSC 3730	Early Musical Development	3
MUSC 3770	Vocal Techniques	3
	Music Education Electives	6
Total credit hours		18

**Music Education Electives**

MUSC 3090	Introduction to Ethnomusicology	3
MUSC 3130	Music for Children 1	6
MUSC 3140	Music for Children 2	6
MUSC 3150	Orchestration	3
MUSC 3360	Topics in Music Education	3
MUSC 3600	Conducting	3
MUSC 3690	Percussion Techniques	3
MUSC 3620	Independent Study	3
MUSC 3730	Early Musical Development	3
MUSC 3770	Vocal Techniques	3
MUSC 3780	Woodwind Techniques	3
MUSC 3790	Brass Techniques	3
MUSC 3800	String Techniques	3
MUSC 3880	Jazz Ensemble Techniques	3
MUSC 4150	Choral Repertoire	3
MUSC 4350	Music for Children 3	6
MUSC 4750	Choral Techniques 1	3
MUSC 4760	Choral Techniques 2	3
MUSC 4770	Band and Orchestral Techniques 1	3
MUSC 4780	Band and Orchestral Techniques 2	3

**Academic Requirement for Graduation**

A Degree Grade Point Average (DGPA) of 2.50 is required for graduation in the Bachelor of Education.

**Academic Standing**

A minimum DGPA of 2.50 must be maintained in the Bachelor of Education for clear standing. A grade of "C" is considered a passing grade for Education courses.

**Additional Academic Considerations**

Each student in the Faculty of Education is presumed to be generally suited to a teaching program. Should this prove not to be the case, the Faculty reserves the right, at any time, to require a student to withdraw from the Bachelor of Education degree program. Unsatisfactory performance in School Experience courses may be considered reason to require a student to withdraw from the faculty. See *Professional Unsuitability By-Law* in this section.

**Appeal Procedures**

The general university policy for appeal of assigned grades applies to the Faculty of Education. See the chapter, [General Academic Regulations and Policy](#), of this Calendar,

Appeals of Assigned Grades. Information about admission decision appeals may be found in the chapter, [Admissions](#).

**SECTION 5: Internationally Educated**

**Teachers**

**SECTION 5: The Academic and Professional Bridging Program Content,**

Internationally educated teachers who have applied to the Manitoba Education Professional Certification Unit and have received official notification that they require additional university coursework to be certified to teach in Manitoba are referred to Post Baccalaureate Diploma in Education (Section 8).

**SECTION 6: Academic Regulations for Bachelor of Education**

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. In addition, the Faculty of Education has regulations and requirements, published below, that apply specifically to its students.

**6.1 Academic Regulations for All Bachelor of Education Programs ,**

(See also sections 6.2, 6.3)



### Application Deadline for School Placement

Returning students planning to take School Experience (EDUB 1960, EDUB 1970, EDUB 1980, EDUB 2960, EDUB 2970 or EDUB 2980) during the upcoming Regular Session must make application for a School Placement no later than February 1. Forms will be available from the Student Services Office, Room 225 Education Building, Faculty of Education beginning December 15. Failure to apply for School Placement by February 1 may result in students being denied a placement.

Integrated B.Mus./B.Ed. students planning to take School Experience (EDUB 1940, EDUB 1950) during the Summer Session must make application for a School Placement no later than November 1. Forms will be distributed in mid-October. Failure to apply for School Placement by November 1 may result in students being denied a placement.

### Assessment of Student Academic Performance

Academic performance is assessed at the end of each regular term in which the student is registered on all courses that are used for credit towards the B.Ed. degree. Decisions concerning academic standing are normally made upon initial completion of 15 credit hours.

Based on the Degree Grade Point Average attained in these courses, the following decisions with respect to the student's eligibility to continue as a Faculty of Education student will be made. Normally,

- The student with a minimum of 2.50 is eligible to proceed;
- The student who passes all courses, but whose DGPA is a 1.99 to 2.49 is placed on academic probation; and
- The student whose DGPA is less than 1.99 is required to withdraw on academic grounds (suspension).

### Academic Probation

Students placed on academic probation may continue on probation until he or she has completed an additional 15 credit hours of required degree coursework. To clear probation, a student must raise his/her DGPA to 2.50 by the end of the probationary period. Normally, students on probation who fail to raise the DGPA to at least 2.50 will be required to withdraw on academic grounds (suspension) for a period of two years.

### Academic Suspension

Students who have been required to withdraw on academic grounds will be informed via registered mail. These students may not register at the university for two academic years. Following this period, students wishing to pursue a Bachelor of Education degree, must make a written request for reinstatement. The following will apply in such cases:

- No application for reinstatement will be considered before a minimum period of two academic years has lapsed from the effective date of the required

withdrawal to the effective date of the requested reinstatement.

- The applicant will be expected to demonstrate that he or she will now be able to meet the academic requirements of the program
- The Associate Dean (Undergraduate) will take into consideration:
  - performance in pass/fail courses;
  - use of academic and personal supports in the program; and
  - life circumstances affecting academic performance
- If the student is reinstated after the time limit for program completion has expired (see Statute of Limitation), the Associate Dean (Undergraduate) shall determine which, if any, courses previously successfully completed shall be repeated or replaced.

### Attendance at Class/Debarment

Regular attendance is expected of all students in all courses. An instructor can initiate procedures to debar a student from attending classes and from final examinations where unexcused absences in a single course exceed three hours of scheduled classes.

See the chapter, [General Academic Regulations and Requirements, Attendance at Class and Debarment](#).

### Continuing Students

See the chapter, [University of Manitoba Admissions](#).

### Dean's Honour List

Students registered in a minimum of 12 credit hours within a single term and who achieve a Term Grade Point Average of 3.90 or better will be included in the Dean's Honour List.

Grades for coursework taken on a letter of permission and used towards the Bachelor of Education degree will be used in meeting the eligibility requirements for the Deans Honour List.

Students receiving failing grades in education coursework where such coursework is required to earn the Bachelor of Education degree and/or student teaching will not be eligible for the Dean's Honour List.

Eligible students must be enrolled in either the After Degree Bachelor of Education program or the Integrated Bachelor of Music/Bachelor of Education program.

### Degree with Distinction

A student graduating from the Bachelor of Education program will have the degree granted "With Distinction" if a minimum DGPA of 4.20 has been attained on all courses that are used for credit towards the B.Ed. degree. This distinction will be noted on the parchment and on the student's transcript.

### Gold Medal

The Gold Medal is awarded each year to the B.Ed. graduate who has the highest Grade Point Average (minimum 3.75) in the last 60 credit hours of the B.Ed. degree and who has completed at least 80 per cent of what is considered to be the normal full course load in each of the last two years of the program.



## Grading Scale

Letter Grade	Grade Point	Level of Achievement	Percentage Range
A+	4.50	Exceptional	95 and above
A	4.00	Excellent	90-94
B+	3.50	Very Good	85-89
B	3.00	Good	80-84
C+	2.50	Satisfactory	75-79
C	2.00	Adequate	70-74
D	1.00	Unacceptable	60-69
F	0.00	Failure	Below 60

### Incompletes

See the chapter, [General Academic Regulations and Requirements, Academic Evaluation](#).

### 5000-level courses

Students enrolled in the B.Ed. and the Integrated B.Mus./B.Ed. programs are not permitted to take 5000-level courses.

### Leave of Absence

Application to return for a School Placement must be made by the above stated deadline.

Any student returning to resume studies after an interval of absence is expected to conform to any new requirements that have been adopted during their absence.

### Part-Time Programs

Opportunities for part-time study are available in all streams as well as the integrated programs. In any of the program streams, the curriculum and instruction courses and the practicum experience for each year must be taken concurrently. All Year 1 course requirements must be completed before proceeding to Year 2. Integrated B.Mus./B.Ed. students must complete Years 1 to 4 inclusive before proceeding to Year 5. When exceptions are permitted, they would normally only be allowed as a result of scheduling conflicts, unavailability of courses scheduled on a rotating basis, compassionate grounds or other exceptional circumstances. Part time students should note that not all curriculum and instruction courses are offered every year (see Application Deadline for School Placement). Students can begin part-time studies in the first year provided they successfully complete 3 credit hours of Education coursework from the Year 1 program requirements. Failure to do so will result in ineligibility to continue in program and require re-application and re-admission.

### Professional Unsuitability By-Law

The Senate of the University has approved a by-law granting authority to the Faculty of Education to require a student to withdraw from the Faculty for reasons of professional unsuitability. A student may be required to withdraw from the Faculty when, at any time, the Professional Unsuitability Committee has determined that the student is unsuited, on consideration of competence or professional fitness, for the practice of teaching.

Copies of this by-law may be obtained from the [Faculty of Education](#) website.

### Repeating a Course

Required courses which receive a grade of "D" must be repeated. Complementary courses which receive a grade of "D" must be repeated or replaced with other complementary courses. Courses which receive a "C" grade or higher grade may be repeated; but, only with the consent of the Associate Dean, Undergraduate Programs.

Education courses may only be repeated once. When a course is repeated, the last grade achieved will be used in calculating the Degree Grade Point Average.

*Early Years* and *Middle Years* students who fail a school experience course will normally be required to repeat all of the Curriculum and Instruction courses related to that year's practicum.

*Weekend College Middle Years* students who fail Curriculum and Instruction course(s) may not be able to complete their program through this scheduling option, given that a new intake is every other year.

*Senior Years and Integrated B.Mus./B.Ed.* students who fail a school experience course will normally be required to repeat the Curriculum and Instruction courses associated with that practicum. Students who fail a Curriculum and Instruction course will normally be required to repeat the practicum course associated with that curriculum area.

### Statute of Limitation

The normal maximum time allowed for the completion of the B.Ed. degree is six years from the date of admission.

### Supplemental Examinations

Supplemental examinations are not permitted in education courses.

### Voluntary Withdrawals

See the chapter, [General Academic Regulations and Requirements](#).

### Voluntary Withdrawal from Practicum Limit

All students admitted effective Sept. 2010 are permitted one voluntary withdrawal from each of the School Experience courses currently numbered as:

- EDUB 1940 Integrated Programs School Experience 1; EDUB 1950 Integrated Programs School Experience 2;
- EDUB 1960 Early Years School Experience 1; EDUB 1960 Early Years School Experience 2;
- EDUB 1970 Middle Years School Experience 1; EDUB 1970 Middle Years School Experience 2;
- EDUB 1980 Senior Years School Experience 1; and EDUB 1980 Senior Years School Experience 2.



**Authorized Withdrawals (AWs)** may be permitted on medical or compassionate grounds, subject to satisfactory documentation. Students must contact an Education Student Advisor to initiate an authorized withdrawal.

## 6.2 Academic Regulations for the After-Degree Bachelor of Education, Early Years, Middle Years (Including a Middle Years Weekend College Scheduling Option) and Senior Years (see also 6.1)

### Transfer of Credit

Students may transfer a maximum of five full courses (30 credit hours) from another recognized university or college Professional Education program toward the After-Degree B.Ed. provided the courses are acceptable to the Bachelor of Education program.

Students will not receive advance standing for any Education course which is more than six years old at the point of their admission to the Faculty of Education.

Courses taken as part of the Certificate in Teaching English as a Second Language (CTESL) or Certificate in Adult and Continuing Education (CACE) through Extended Education, U of M, may receive credit for some coursework. See 8.5 PBDE Transfer of Credit for a listing of equivalents.

Those students who are currently in the program and wish to register for a course at another university or college must complete an "Application for Letter of Permission" prior to registering.

### Maximum Course Load (excluding Weekend College Middle Years Scheduling Option) (currently under review)

The maximum credit hour load for B.Ed. students is 30 credit hours in the regular session (September-April). Students wishing to take 33 credit hours of courses do not need permission. Students wishing to take courses above 33 credit hours may do so with the following conditions:

- Requests to complete 36 credit hours are approved by the academic advisor provided the student's minimum Degree Grade Point average is 3.50.
- Requests to complete in excess of 30 credit hours where the student's degree grade point average is below the minimums noted above or where the student wishes to complete more than 36 credit hours must be approved by the Associate Dean, Undergraduate Programs. In this case, students must make formal request in writing to the Associate Dean, Undergraduate Programs.

Students in the Senior Years Stream may request written permission to complete additional Curriculum and Instruction courses, provided they have previously completed the course requirements for this additional major/minor and where there is space in that Curriculum and Instruction course. Where permission is granted, students may substitute this credit for three credit hours of complementary

EDUA 1500	Aboriginal Education
EDUA 1502	Measurement and Evaluation
EDUA 1510	Foundations of Moral and Religious Education
EDUA 1520	Recent Developments in Educational Administration and Foundations
EDUA 1530	Recent Developments in Educational Psychology
EDUA 1540	Cross-Cultural Education
EDUA 1550	Communication and Interpersonal Relationships in Education
EDUA 1560	Adult Learning and Development
EDUA 1570	Foundations of Adult Education

course work as outlined in their program plan. Students who choose to take more than the required two Curriculum and Instruction courses in their program have no guarantee that a practicum teaching experience will be provided in that additional teachable area.

### 6.3 Academic Regulations for the Integrated B.Mus./B.Ed. (see also 6.1),

In addition to 6.1, the following regulations apply to the Integrated B.Mus./B.Ed. program.

#### Major/Minor Academic Requirements

Students must achieve a grade of C or greater in all courses which apply to the major and minor.

#### Transfer of Credit

Students may transfer a maximum of ten full course equivalents (60 credit hours) from another recognized university or college toward the Integrated B.Mus./B.Ed. degree provided the courses are acceptable to the program. Those students who are currently in the program and wish to register for a course at another university or college must complete an "Application for Letter of Permission" prior to registering.

#### University Written English and Mathematics

**Requirement for Students in the Integrated B.Mus./B.Ed.** All students are required to complete the university written English and Mathematics requirement. This requirement is described in the chapter, General Academic Regulations and Requirements.

## SECTION 7: Complementary Courses

**Not all courses are offered every year.**

All students admitted to the Bachelor of Education degree programs for September 2008 and beyond are required to complete six (6) credit hours of specific Content Area comprised of three (3) credit hours of coursework in Aboriginal Education and three (3) credit hours of coursework in Special Education/Diversity as two of their complementary courses. The three (3) credit hours required for Aboriginal Education will be completed by taking one of EDUA 1500 Aboriginal Education or EDUB 1602 Aboriginal Perspectives and the Curriculum and the three (3) credit hours of coursework in Special Education/Diversity will be completed by taking one of 1540 Cross Cultural Education, EDUB 1620 Principles and Procedures of Second Language Teaching, EDUB 1820 Language and Content Instruction of ESL/Bilingual Students or EDUB 1830 La pédagogie du français de base aux niveaux intermédiaire et de la jeune enfance.

For any remaining complementary courses students can choose from the following list:



EDUA 1580	Program Planning in Adult Education
EDUA 1590	Facilitating Adult Education
EDUB 1600	Teaching General Music
EDUB 1602 *	Aboriginal Perspectives and the Curriculum (Not open to students outside the B.Ed. or B.Mus/B.Ed. Programs)
EDUB 1604	Academic and Professional English for Multilingual Teachers
EDUB 1606	Teaching ESL Foundational Literacy, Academics and Language (LAL) Students
EDUB 1608	Assessment and Testing of EAL/ESL Learners
EDUB 1614	K-8 General Curriculum
EDUB 1620	Principles and Procedures of Second Language Teaching
EDUB 1640	Teaching ESL Vocabulary and Pronunciation
EDUB 1650	Teaching ESL Grammar
EDUB 1660	Computers in Second Language Teaching
EDUB 1680	Media Literacy
EDUB 1710	Literature for Adolescents
EDUB 1720	Literature for Children
EDUB 1730	Art Across the Curriculum
EDUB 1740	Drama Across the Curriculum
EDUB 1750	Basic Experiences in Movement and Dance Education
EDUB 1760	Historical Development of Physical Science Up to the 20th Century
EDUB 1780	Integration of Technological Literacy Across the K-12 Curriculum
EDUB 1800	Recent Developments in Learning and Teaching Senior Years Mathematics
EDUB 1810	Computer-Based Multimedia in Education
EDUB 1820	Language and Content Instruction of ESL/Bilingual Students
EDUB 1830	La pédagogie du français de base aux niveaux intermédiaire et de la jeune enfance
EDUB 1840	Recent Developments in CTL 1 (Different topics are offered under these course numbers)
EDUB 1850	Recent Developments in CTL 2 (Different topics are offered under these course numbers)
EDUB 1860	Practicum in Teaching English as a Second Language
EDUB 1870	Practical Work in School Science
EDUB 2160	Teaching Music in Early/Middle Years
* Note:	Senior Years (Year 1) students with a major or minor in Native Students may be removed from EDUB 1602 as this course is required in Year 2.

## SECTION 8: Post Baccalaureate Diploma in Education

The Faculty of Education offers a Post Baccalaureate Diploma in Education (PBDE) designed for teachers and other professionals.

The unique features of the PBDE program are that students can: design their own program of study and tailor it to their own areas of interest; take courses at the Faculty of Education as well as at other faculties and schools at the U of M or other approved institutions. A wide selection of courses is available through Summer Session, distance education, via the internet and summer institutes.

This program is also used for Internationally Educated Teachers who require additional coursework to meet Manitoba Teaching Certification requirements.

The PBDE is recognized by Manitoba Education for salary classification purposes. Further, the PBDE program provides the opportunity for teachers to follow courses of study leading to the school counsellor, special education and special education coordinator certificates, and to partial fulfillment of the requirements of the school administrators' (Level 1) and principals' (Level 2) certificates, all of which are issued by Manitoba Education. For information regarding specialist certificates, contact: Professional Certification Unit, Manitoba Education, Box 700, Russell, Manitoba, R0J 1W0; telephone toll free at: 1-800-667-2378, or 1-204-773-2998,

or e-mail [certification@gov.mb.ca](mailto:certification@gov.mb.ca), or web: [www.edu.gov.mb.ca/k12/profcert/3clinician](http://www.edu.gov.mb.ca/k12/profcert/3clinician).

### 8.1 Admission Requirements , Applicants for Admission must possess:

- A Bachelor of Education degree and one of the following types of certificates granted by Manitoba Education: General Certificate, Limited Certificate, or Clinicians' Certificate; or equivalent from other provinces [See note 1 on teacher certification] or a bachelor's degree and two years of appropriate teaching/work experience (see note 2);
- A Grade Point Average of 2.00 in the bachelor's degree (including any after degree certification program).

#### Note 1:

#### Teacher Certification

The majority of applicants will possess a valid teaching certificate before being admitted to the Post Baccalaureate Diploma in Education Program.

The granting of a certificate to teach in the public schools of Manitoba is the prerogative of Manitoba Education and is



based on a recognized program of teacher education. Individuals wishing to apply for such certification should contact the Professional Certification Unit, Manitoba Education.

**Note 2:**

Applicants must include a brief statement as to educational plans and a resume showing evidence of two years of appropriate full-time teaching or work experience.

**8.2 Admission Procedure,**

Applications may be obtained from the Office of Graduate & Professional, and Research, Faculty of Education, or Enrolment Services, 424 University Centre. Applications can also be found at <http://umanitoba.ca/faculties/education/future/index.html>. Completed applications must be returned to Enrolment Services/Admissions Office, 424 University Centre by:

**Canadian/US Applicants**

April 1 for classes beginning in May

June 1 for classes beginning in July

August 1 for classes beginning in September (Fall)

December 1 for classes beginning in January (Winter)

**International Applicants**

April 1 for classes beginning in September (Fall)

June 1 for classes beginning in January (Winter)

**8.3 Program Requirements ,**

**REMINDER:** While Education academic advisors are available to clarify faculty and university regulations and degree requirements, it is the student's responsibility to ensure that diploma and program requirements are met.

The Post Baccalaureate Diploma in Education consists of 30 credit hours of coursework, subject to the following regulations:

a) A minimum of 12 credit hours must be taken in the Faculty of Education at the 5000-level;

b) A maximum of 18 credit hours may be taken in the Faculty of Education below the 5000-level;

c) A maximum of 18 credit hours may be taken outside the Faculty of Education at the introductory or higher level of which six credit hours may be taken at the 1000-level. In the case of language study other than English or French, a maximum of 12 credit hours may be taken at the 1000-level provided both are in the same language.

d) PBDE students are not permitted to take graduate courses.

**8.4 Academic Regulations, Appeal Procedures**

The general university policy for appeal of assigned grades applies to the Faculty of Education. See the chapter, [General Academic Regulations and Policy](#), of this Calendar, [Appeals of Assigned Grades](#). Information about [admission decision appeals](#) may be found in the chapter, Admissions.

**Assessment of Student Academic Performance**

Academic performance is normally assessed at the completion of nine credit hours of course work and at the end of every session thereafter. A minimum grade of "C" is required for each course that is to be included in the student's diploma program. Effective September 2011, a student must maintain a minimum Degree Grade Point Average of 2.50 to continue in the program. A student whose Degree Grade Point Average falls below 2.50 will be placed on academic suspension for two years. Reapplication is required for readmission to the program.

**Attendance at Class**

Regular attendance is expected of all students in all courses. An instructor can initiate procedures to debar a student from attending classes and from final examinations where unexcused absences exceed three hours of scheduled classes in any one term.

**Continuing Students**

See the chapter, [University of Manitoba Admissions](#).

**Debarment**

See the chapter, [General Academic Regulations and Requirements](#), Attendance at Class and Debarment.



## Grading Scale

Letter Grade	Grade Point	Level of Achievement	Percentage Range
A+	4.50	Exceptional	95 and above
A	4.00	Excellent	90-94
B+	3.50	Very Good	85-89
B	3.00	Good	80-84
C+	2.50	Satisfactory	75-79
C	2.00	Adequate	70-74
D	1.00	Marginal	60-69
F	0.00	Failure	Below 60

## Incompletes

See the chapter, [General Academic Regulations and Requirements](#), Academic Evaluation.

Subject to approval by the Faculty, transfer of credit may be granted on the basis of:

## Maximum Time Limits

The maximum time allowed for completing the PBDE is nine years. In addition, a student will not be permitted to count toward the diploma any course completed more than nine years prior to the completion date of the diploma. Students will be permitted to retake and use as PBDE credit Education courses beyond the nine years provided they have not been previously used elsewhere for credit toward a degree or diploma program. Courses from other faculties will need to be dealt with on an individual basis.

- completed university level courses that have not been previously used towards a degree,

- completed M.Ed. courses not used to satisfy requirements for the M.Ed. degree, and

- the following courses completed through the Certificate in Adult and Continuing Education (CACE), University of Manitoba:

CACE 43001 Foundations of Adult Education transferred as EDUA 1570 Foundations of Adult Education (3); CACE 43002 Program Planning in Adult Education transferred as EDUA 1580 Program Planning in Adult Education (3); CACE 43003 Adult Learning and Development transferred as EDUA 1560 Adult Learning and Development (3); CACE 43004 Facilitating Adult Education transferred as EDUA 1590 Facilitating Adult Education (3).

## Repeating a Course

Courses for which a grade of "F" or "D" is obtained, must be repeated or replaced; however, courses in which a grade of "C" or higher is obtained may only be repeated with the consent of the Associate Dean, PBDE Program. Courses may be repeated once. When a course is repeated, the last grade achieved will be used in calculating the Degree Grade Point Average.

Completion of the CACE certificate is not required to receive individual credit.

## Supplemental Examinations

Supplemental examinations are not permitted in education courses.

- a maximum of 15 credit hours completed through the Certificate in Teaching English as a Second Language (CTESL), University of Manitoba from the following:

39301 Principles and Procedures of Second Language transferred as EDUB 1620 Principles and Procedures of Second Language Teaching (3); 39302 Teaching ESL Vocabulary and Pronunciation as EDUB 1640 Teaching ESL Vocabulary and Pronunciation (3); 39303 Teaching ESL Grammar as EDUB 1650 Teaching ESL Grammar (3); 39304 Practicum in Teaching English as a Second Language (TESL) as EDUB 1860 Practicum in Teaching English as a Second Language (TESL) (3); 39305 Content-based Second Language Instruction as EDUB 1820 Language and Content Instruction of ESL/Bilingual Students (3); 39306 Computers in Second Language Teaching as EDUB 1660 Computers in Second Language Teaching (3); 39307 English for Non-Native Speaking (NNS) Teachers of English as EDUB 1604 Academic and Professional English for Multilingual Teachers; 39308 Teaching ESL Literacy as EDUB 1606 Teaching ESL Foundational Literacy, Academics & Language (3); EDUB 1608 Assessment and

## Voluntary Withdrawals

See the chapter, [General Academic Regulations and Requirements](#).

**Authorized Withdrawals (AWs)** may be permitted on medical or compassionate grounds, subject to satisfactory documentation. Students must contact an Education Student Advisor to initiate an authorized withdrawal.

## 8.5 Transfer of Credit,



Testing of EAL/ESL Learners 98592 Special Topics as parallel courses offered as EDUB 1840 Recent Developments in Curriculum, Teaching and Learning 1: eg. Adult ESL and the Canadian Language Benchmarks (3), or additional approved topics courses.

Completion of the CTESL certificate is not required to receive individual credit.

A maximum of 12 credit hours may be transferred from an institution other than the University of Manitoba. There is no maximum limit for courses completed at the University of Manitoba.

Courses transferred to the PBDE must fall within the nine year statute of limitation at the completion date, must be within the program requirements, and must have a grade of C or better.

### 8.6 Courses Grouped by Subject, Ungrouped courses

EDUB 5870 Mentoring for Teachers Cr.Hrs.3

EDUB 5940 Instructional Product Development Cr.Hrs.3

#### Early Years Education

EDUA 5930 Observing Child Behaviour Cr.Hrs.3

EDUA 5940 Language and Symbolic Process Cr.Hrs.3

#### Educational Administration

EDUA 5010 Introduction to Educational Administration Cr.Hrs.3

EDUA 5020 Principles of Curriculum Development Cr.Hrs.3

EDUA 5030 Management of Educational Institutions Cr.Hrs.3

EDUA 5040 Personnel Administration in Education Cr.Hrs.3

EDUA 5060 Principles of Instructional Supervision Cr.Hrs.3

EDUA 5070 Organizational Behaviour in Educational Institutions Cr.Hrs.3

EDUA 5080 Recent Developments in Educational Administration 1 Cr.Hrs.3

EDUA 5090 Recent Developments in Educational Administration 2 Cr.Hrs.3

EDUA 5100 Issues in the Administration of Education Cr.Hrs.3

#### Educational Psychology

EDUA 5710 Readings in Educational Psychology 1 Cr.Hrs.3

EDUA 5730 Recent Developments in Educational Psychology 1 Cr.Hrs.3.

EDUA 5740 Recent Developments in Educational Psychology 2 Cr.Hrs.3

EDUA 5760 Psychology of Instruction in Educational Contexts Cr.Hrs.3

#### Educational Technology

EDUB 5840 Internet Pedagogy Cr.Hrs.3

EDUB 5850 Theory and Practice of Designing and Developing Web-based Courses Cr.Hrs.3

EDUB 5860 Project Management in Education and Training Cr.Hrs.3

#### Expressive Arts

EDUB 5012 Video Art, Culture and Education Cr.Hrs.3

EDUB 5040 Theory and Practice of Teaching Art (Elementary) Cr.Hrs.6

EDUB 5060 Theory and Practice of Teaching Art in the Senior Years 1 Cr.Hrs.3

EDUB 5120 Music in the Early Years/Middle Years School 1 Cr.Hrs.3

EDUB 5130 Music in the Early Years/Middle Years School 2 Cr.Hrs.3

EDUB 5140 Special Methods in Music 1 Cr.Hrs.3

EDUB 5150 Special Methods in Music 2 Cr.Hrs.3

EDUB 5160 School Band Cr.Hrs.3

EDUB 5190 School Music Productions Cr.Hrs.3

EDUB 5250 Music: Advanced Choral Methods Cr.Hrs.3

#### Guidance and Counselling

EDUA 5480 Counselling Skills Cr.Hrs.3



EDUA 5490 Field Placement in Counselling Cr.Hrs.3

EDUA 5500 Theories and Issues in School Counselling Cr.Hrs.3

EDUA 5510 Elementary School Counselling Cr.Hrs.3

EDUA 5520 Ethics in Counselling Cr.Hrs.3

EDUA 5530 Secondary School Counselling Cr.Hrs.3

EDUA 5540 Groups in Guidance Cr.Hrs.3

EDUA 5550 Psychology of Human Relationships Cr.Hrs.3

EDUA 5570 Family Life Education Cr.Hrs.3

EDUA 5580 Career Development Cr.Hrs.3

EDUA 5590 Career Information Cr.Hrs.3

**Inclusive Special Education**

EDUA 5600 Introduction to Inclusive Special Education Cr.Hrs.6

EDUA 5610 Field Experience in Inclusive Special Education Cr.Hrs.6

EDUA 5620 Teaching Children Through Alternative and Augmented Communication Cr.Hrs.3

EDUA 5630 Assessment and Instruction in Inclusive Special Education Cr.Hrs.6

EDUA 5640 Inclusive Special Education: Early and Middle Years Cr.Hrs.3

EDUA 5650 Inclusive Special Education: High School and Transition to Adult Life Cr.Hrs.3

EDUA 5660 Organization and Delivery of Resource Program and Support Services Cr.Hrs.3

EDUA 5670 Strategies for Organizing Inclusive Classrooms and Schools Cr.Hrs.3

EDUA 5680 Promoting Responsible Behaviour in Educational Settings Cr.Hrs.3

EDUA 5690 Focus on Exceptionality: Gifted and Talented Cr.Hrs.3

EDUA 5770 Focus on Exceptionality: An Ecological Approach to FAS/E Cr.Hrs.3

**Instructional Design and Evaluation**

EDUA 5800 Introduction to Educational Research Cr.Hrs.3

EDUA 5810 Theory of Test Construction Cr.Hrs.3

**Language Arts**

EDUB 5330 Teaching Language and Literacy in the Content Areas Cr.Hrs.3

EDUB 5350 Current Issues in Language and Literacy Cr.Hrs.3

EDUB 5360 Children's Literature Cr.Hrs.3

EDUB 5370 Adolescent Literature Cr.Hrs.3

EDUB 5380 Theory and Practice in Written Composition Cr.Hrs.3

EDUB 5390 The Teaching of Written Composition Cr.Hrs.3

EDUB 5400 Diagnostic and Remedial Techniques in Language Arts Cr.Hrs.6

**Library Science**

EDUB 5550 Library Reference and Informational Materials Cr.Hrs.6

**Mathematics**

EDUB 5760 Recent Developments in Mathematics Education Cr.Hrs.3

EDUB 5770 Diagnosis and Remediation in Elementary School Mathematics Cr.Hrs.3

**Readings in Curriculum**

EDUB 5200 Readings in Curriculum, Teaching and Learning 1 Cr.Hrs.3

EDUB 5210 Readings in Curriculum, Teaching and Learning 2 Cr.Hrs.3

EDUB 5220 Recent Developments in Curriculum, Teaching and Learning 1 Cr.Hrs.3

EDUB 5230 Recent Developments in Curriculum, Teaching and Learning 2 Cr.Hrs.3

EDUB 5470 Recent Developments in Curriculum: Mathematics and Natural Sciences 1 Cr.Hrs.3



EDUB 5480 Recent Developments in Curriculum:  
 Mathematics and Natural Sciences 2 Cr.Hrs.3

### Second Language Education

EDUB 5510 ESL Materials Development and Practicum  
 Cr.Hrs.3

EDUB 5520 Grammar in ESL Learning and Instruction  
 Cr.Hrs.3

EDUB 5530 ESL and Content Instruction Cr.Hrs.3

EDUB 5540 Vocabulary and Pronunciation Instruction  
 Cr.Hrs.3

EDUB 5580 Fundamentals of ESL (English Second  
 Language) Instruction Cr.Hrs.3

### Social Foundations of Education

EDUA 5200 Readings in Educational Foundations Cr.Hrs.3

EDUA 5210 Recent Developments in Educational  
 Foundations 1 Cr.Hrs.3

EDUA 5230 Studies in International Education Cr.Hrs.3

### Social Studies

EDUB 5600 The Teaching of Social Studies in the Early and  
 Middle Years Cr.Hrs.3

EDUB 5660 Theoretical Foundations of Social Studies  
 Cr.Hrs.3

### Technical/Vocational

EDUB 5100 Developing Competency Skills in Enterprise  
 Education 1 Cr.Hrs.3

EDUB 5110 Developing Competency Skills in Enterprise  
 Education 2 Cr.Hrs.3

EDUB 5690 Seminar in Business Education Cr.Hrs.6

## SECTION 9: Additional Information

### Visiting Students

Students who are enrolled in a Faculty or School of  
 Education at another institution and receive an appropriate  
 Letter of Permission may seek permission to be a Visiting  
 Student.

### Students Registered in Other Faculties or Schools

Undergraduate students currently registered in other  
 faculties/schools may take education complementary  
 courses in the Bachelor of Education program. Written  
 permission from the Faculty is **not** required.

5000 level courses are restricted to students holding a  
 degree. Those students must obtain permission by  
 completing the form 'Registration Permission' available at  
 website [umanitoba.ca/education/current](http://umanitoba.ca/education/current) under PBDE or from  
 Room 227 Education Building.

### Information Updates

Scheduling changes to courses and practicum will be  
 updated to *Aurora Student*. Students are expected to check  
 their Week-At-A-Glance on *Aurora Student* to confirm  
 location, time, and instructor changes. Cohort meetings and  
 faculty events will be posted on the faculty website. Students  
 are encouraged to regularly refer to the website.

### Registration, Voluntary Withdrawal and Fee Refund Deadlines

Education courses may have unique start and end dates.  
 Students are referred to *Aurora Student Class Schedule* to  
 view VW and fee refund dates.

### Facility Use Fees

Some classes in physical education/movement curriculum  
 and instruction courses (EDUB 1020, EDUB 2020, EDUB  
 1260, EDUB 2150, and EDUB 2310) may be held in the  
 Frank Kennedy Centre gymnasiums. Students must pay a  
 facility use fee to access the gymnasiums prior to the first  
 scheduled class. The fee can be paid at the Frank Kennedy  
 Centre or Max Bell Centre, Customer Service Desks.

### Faculty Events

The faculty sponsors a number of lectures, workshops and  
 forums. Details will be posted on the "News and Events" of  
 the faculty's website: [umanitoba.ca/education](http://umanitoba.ca/education).

## SECTION 10: Department of Curriculum, Teaching and Learning -1000 Level

**EDUB 1000** Early Years Philosophy and Practice 1 Cr.Hrs.1  
 (Formerly 132.100) An introductory, interdisciplinary study of  
 Curriculum and Instruction in Early Years education  
 (Kindergarten to Grade 4). Not to be held with the former  
 063.105. Corequisite: EDUB 1010 (or 132.101), EDUB 1020  
 (or 132.102), EDUB 1030 (or 132.103), EDUB 1040 (or  
 132.104), EDUB 1050 (or 132.105), EDUB 1060 (or  
 132.106), EDUB 1960 (or 132.196); pre- or corequisite:  
 EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB



1990 (or 132.199).

**EDUB 1010** Early Years Curriculum and Instruction in Language and Literacy 1 Cr.Hrs.3  
(Formerly 132.101) An introductory, interdisciplinary study of Curriculum and Instruction in Early Years education (Kindergarten to Grade 4). Not to be held with the former 063.106. Corequisite: EDUB 1000 (or 132.100), EDUB 1020 (or 132.102), EDUB 1030 (or 132.103), EDUB 1040 (or 132.104), EDUB 1050 (or 132.105), EDUB 1060 (or 132.106), EDUB 1960 (or 132.196); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1990 (or 132.199).

**EDUB 1020** Early Years Curriculum and Instruction in Music and Movement 1 Cr.Hrs.1  
(Formerly 132.102) An introductory, interdisciplinary study of Curriculum and Instruction in Early Years education (Kindergarten to Grade 4). Not to be held with the former 063.107. Corequisite: EDUB 1000 (or 132.100), EDUB 1010 (or 132.101), EDUB 1030 (or 132.103), EDUB 1040 (or 132.104), EDUB 1050 (or 132.105), EDUB 1060 (or 132.106), EDUB 1960 (or 132.196); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1990 (or 132.199).

**EDUB 1030** Early Years Curriculum and Instruction in Art and Drama 1 Cr.Hrs.2  
(Formerly 132.103) An introductory, interdisciplinary study of Curriculum and Instruction in Early Years education (Kindergarten to Grade 4). Not to be held with the former 063.108. Corequisite: EDUB 1000 (or 132.100), EDUB 1010 (or 132.101), EDUB 1020 (or 132.102), EDUB 1040 (or 132.104), EDUB 1050 (or 132.105), EDUB 1060 (or 132.106), EDUB 1960 (or 132.196); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1990 (or 132.199).

**EDUB 1040** Early Years Curriculum and Instruction in Social Studies 1 Cr.Hrs.1  
(Formerly 132.104) An introductory, interdisciplinary study of Curriculum and Instruction in Early Years education (Kindergarten to Grade 4). Not to be held with the former 063.109. Corequisite: EDUB 1000 (or 132.100), EDUB 1010 (or 132.101), EDUB 1020 (or 132.102), EDUB 1030 (or 132.103), EDUB 1050 (or 132.105), EDUB 1060 (or 132.106), EDUB 1960 (or 132.196); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1990 (or 132.199).

**EDUB 1050** Early Years Curriculum and Instruction in Mathematics 1 Cr.Hrs.2  
(Formerly 132.105) An introductory, interdisciplinary study of Curriculum and Instruction in Early Years education (Kindergarten to Grade 4). Not to be held with the former 081.105. Corequisite: EDUB 1000 (or 132.100), EDUB 1010 (or 132.101), EDUB 1020 (or 132.102), EDUB 1030 (or 132.103), EDUB 1040 (or 132.104), EDUB 1060 (or 132.106), EDUB 1960 (or 132.196); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1990 (or 132.199).

**EDUB 1060** Early Years Curriculum and Instruction in Science and Health 1 Cr.Hrs.2  
(Formerly 132.106) An introductory, interdisciplinary study of Curriculum and Instruction in Early Years education (Kindergarten to Grade 4). Not to be held with the former

081.106. Corequisite: EDUB 1000 (or 132.100), EDUB 1010 (or 132.101), EDUB 1020 (or 132.102), EDUB 1030 (or 132.103), EDUB 1040 (or 132.104), EDUB 1050 (or 132.105), EDUB 1960 (or 132.196); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1990 (or 132.199).

**EDUB 1100** Introduction to Teaching Language Arts in the Middle Years Cr.Hrs.3  
(Formerly 132.110) An overview of curriculum, instructional approaches, and techniques relevant to language literacy education at the Middle Years level, with emphasis on oracy and reading instruction. Not to be held with the former 063.120. Corequisite: EDUB 1110 (or 132.111), EDUB 1120 (or 132.112), EDUB 1130 (or 132.113), EDUB 1140 (or 132.114), EDUB 1970 (or 132.197); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 1990 (or 132.199).

**EDUB 1110** Introduction to Teaching Social Studies in the Middle Years Cr.Hrs.1  
(Formerly 132.111) A study of the fundamentals of social studies education in the Middle Years, with particular emphasis on the goals, curriculum approaches, content, and initial planning issues. Not to be held with the former 063.121. Corequisite: EDUB 1100 (or 132.110), EDUB 1120 (or 132.112), EDUB 1130 (or 132.113), EDUB 1140 (or 132.114), EDUB 1970 (or 132.197); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 1990 (or 132.199).

**EDUB 1120** Teaching Drama in the Middle Years Cr.Hrs.1  
(Formerly 132.112) An overview of the teaching strategies appropriate to teaching drama in the Middle Years. Not to be held with the former 063.122. Corequisite: EDUB 1100 (or 132.110), EDUB 1110 (or 132.111), EDUB 1130 (or 132.113), EDUB 1140 (or 132.114), EDUB 1970 (or 132.197); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 1990 (or 132.199).

**EDUB 1130** Introduction to Teaching Science in the Middle Years Cr.Hrs.1  
(Formerly 132.113) This course will explore Middle Years science curricular content and issues. It will also provide teaching and learning models and tools for structuring science knowledge and drawing relationships among theory, evidence, and values in Science. Not to be held with the former 081.120. Corequisite: EDUB 1100 (or 132.110), EDUB 1110 (or 132.111), EDUB 1120 (or 132.112), EDUB 1140 (or 132.114), EDUB 1970 (or 132.197); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 1990 (or 132.199).

**EDUB 1140** Introduction to Teaching Mathematics in the Middle Years Cr.Hrs.3  
(Formerly 132.114) An overview of Middle Years mathematics curricula. Not to be held with the former 081.121. Corequisite: EDUB 1100 (or 132.110), EDUB 1110 (or 132.111), EDUB 1120 (or 132.112), EDUB 1130 (or 132.113), EDUB 1970 (or 132.197); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 1990 (or 132.199).



132.199).

**EDUB 1200** Teaching the Arts in Senior Years Cr.Hrs.3 (Formerly 132.120) For specialists in art, drama and music and those without a specialist background, the course will address common elements and issues in arts education at the Senior Years level. Senior Years: corequisite: EDUB 1500 (or 132.150), EDUB 1980 (or 132.198), Curriculum and Instruction for major/minor; pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199); Integrated B.Mus./B.Ed. and B.H.Ecol./B.Ed.: prerequisite: Year 1-4 inclusive.

**EDUB 1210** Teaching English Language Arts in Senior Years 1 Cr.Hrs.3 (Formerly 132.121) The course will introduce students to the history, theories, principles, and practices of teaching English language arts at the Senior Years level. Senior Years: corequisite: EDUB 1500 (or 132.150), EDUB 1980 (or 132.198), Curriculum and Instruction for major/minor; pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199); Integrated B.Mus./B.Ed. and B.H.Ecol./B.Ed.: prerequisite: Year 1-4 inclusive.

**EDUB 1230** Teaching Social Studies in Senior Years Cr.Hrs.3 (Formerly 132.123) A study of theoretical and practical issues relating to the curriculum, resources, instructional approaches and evaluation processes relevant to the teaching of social studies at the Senior Years level. Includes the exploration of current issues and trends in Canadian social studies. Senior Years: corequisite: EDUB 1500 (or 132.150), EDUB 1980 (or 132.198), Curriculum and Instruction for major/minor; pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199); Integrated B.Mus./B.Ed. and B.H.Ecol./B.Ed.: prerequisite: Year 1-4 inclusive.

**EDUB 1240** Teaching Human Ecology in Senior Years 1 Cr.Hrs.3 (Formerly 132.124) The study of curriculum and instructional approaches relevant to the teaching of human ecology at the Senior Years level. Senior Years: corequisite: EDUB 1500 (or 132.150), EDUB 1980 (or 132.198), Curriculum and Instruction for major/minor; pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199).

**EDUB 1250** Teaching Mathematics in Senior Years 1 Cr.Hrs.3 (Formerly 132.125) A study of curriculum and instructional approaches relevant to teaching mathematics at the Senior Years level. Senior Years: corequisite: EDUB 1500, EDUB 1800, EDUB 1980), Curriculum and Instruction for major/minor; pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199); EDUB 1800 (or 132.180); Integrated B.Mus./B.Ed. and B.H.Ecol./B.Ed.: prerequisite: Year 1-4 inclusive.

**EDUB 1260** Teaching Physical Education/Health Education in Senior Years 1 Cr.Hrs.3 (Formerly 132.126) A study of curriculum and instructional approaches relevant to the teaching of physical education and health education at the Senior Years level. Senior

Years: corequisite: EDUB 1500 (or 132.150), EDUB 1980 (or 132.198), Curriculum and Instruction for major/minor; pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199); Integrated B.Mus./B.Ed. and B.H.Ecol./B.Ed.: prerequisite: Year 1-4 inclusive.

**EDUB 1270** Teaching Senior Years Science Cr.Hrs.3 (Formerly 132.127) General principles of science education, conceptual development, cognitive and learning theories, scientific literacy, the nature of science, contextual teaching, and the science-technology-society connection are presented and discussed. Emphasis will be placed on using conceptual development models to help science teachers present concepts and topics. Senior Years: corequisite: EDUB 1500 (or 132.150), EDUB 1980 (or 132.198), Curriculum and Instruction for major/minor; pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199); Integrated B.Mus./B.Ed. and B.H.Ecol./B.Ed.: prerequisite: Year 1-4 inclusive.

**EDUB 1280** L'enseignement du français de base au Niveau Secondaire 1 Cr.Hrs.3 (Formerly 132.128) Ce cours examine les principes fondamentaux et la mise en pratique de l'enseignement et l'apprentissage du français langue seconde au niveau secondaire. L'accent est mis sur les pratiques pédagogiques de l'approche communicative expérientielle. Senior Years: corequisite: EDUB 1500 (or 132.150), EDUB 1980 (or 132.198), Curriculum and Instruction for major/minor; pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199); Integrated B.Mus./B.Ed. and B.H.Ecol./B.Ed.: prerequisite: Year 1-4 inclusive.

**EDUB 1350** Teaching a Heritage, Aboriginal, or International Language 1 Cr.Hrs.3 (Formerly 132.135) Curriculum principles and procedures in teaching a language other than English or French. Senior Years: corequisite: EDUB 1500 (or 132.150), EDUB 1980 (or 132.198), Curriculum and Instruction for major/minor; pre- or corequisite EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199); Integrated B.Mus./B.Ed. and B.H.Ecol./B.Ed. prerequisite: Year 1-4 inclusive. Early/Middle Years: Complementary course; prerequisite: 18 credits in a language other than English or French. Not to be held with the former courses 132.122, 063.409, or 063.323.

**EDUB 1500** Education in the Senior Years Cr.Hrs.3 (Formerly 132.150) An examination of the assumptions about and goals of Senior Years education, the role of the Senior Years teacher, and the Senior Years curriculum in the schools. Corequisite: EDUB 1980 (or 132.198), curriculum and instruction for major and minor; pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199).

**EDUB 1510** Principles and Processes of Teaching Cr.Hrs.3 (Formerly 132.151) This foundational course is required for all Senior Years students. In it, students will develop richer orientations to the teaching processes of organizing and leading learning in Senior Years classrooms. Not to be held with the former 081.317.



**EDUB 1520** Education in the Senior Years Integrated Programs 1 Cr.Hrs.2  
(Formerly 132.152) An examination of the assumptions about and goals of Senior Years education, the role of the Senior Years teacher, and the Senior Years curriculum in the schools. For students in the integrated B.Ed. programs. Not to be held with EDUB 1500 (or 132.150). Corequisite: EDUB 1940 (or 132.194).

**EDUB 1530** Education in the Senior Years Integrated Programs 2 Cr.Hrs.1  
(Formerly 132.153) An examination of the assumptions about and goals of Senior Years education, the role of the Senior Years teacher, and the Senior Years curriculum in the schools. For students in the integrated B.Ed. programs. Not to be held with EDUB 1500 (or 132.150). Prerequisite: EDUB 1520 (or 132.152). Corequisite: EDUB 1950 (or 132.195).

**EDUB 1600** Teaching General Music Cr.Hrs.3  
(Formerly 132.160) A study of teaching music in Early and Middle Years schools. For both classroom teachers and Music specialists, the course covers all traditional areas of music instruction as well as music's role across the curriculum.

**EDUB 1602** Aboriginal Perspectives and the Curriculum Cr.Hrs.3  
The course will focus on fostering teacher candidate pedagogical knowledge, orientations and capabilities for developing and implementing curricula for kindergarten through to Grade 12 that reflect Aboriginal perspectives. May not be held with EDUB 1840 Recent Developments in CTL where the course section taken was "Integrating Aboriginal Perspectives into the Manitoba Curriculum."

**EDUB 1604** Academic and Professional English for Multilingual Teachers Cr.Hrs.3  
This course provides English language development for multilingual teachers of English as a second/additional language and other subject areas. The focus is on teacher, classroom, and professional English that can be applied in various contexts. Not to be held with the former EDUB 1670.

**EDUB 1606** Teaching ESL Foundational Literacy, Academics and LAnguage (LAL) Students Cr.Hrs.3  
This course focuses on the theoretical and practical aspects of teaching foundational English Literacy, numeracy, academics, oral language and schooling routines to English language learners. Definitions, assessment, and instructional strategies will be examined with a view to meeting the diverse needs of EAL/bilingual literacy learners.

**EDUB 1608** Assessment and Testing of EAL/ESL Learners Cr.Hrs.3  
Assessment and Testing of ESL/EAL Learners. This course will examine various methods in assessment and testing of English language learners, including formative, summative and alternative assessment strategies. Attention will be paid to the following areas: initial and ongoing needs assessment, evaluating without tests, evaluating with tests, and questioning the educative value of assessment and testing. Not to be held with EDUB 1840 where the course taken was "Assessment & Testing of ESL Learners".

**EDUB 1614** K-8 Curriculum Studies Cr.Hrs.3  
A focused study of the philosophy, purposes and content of K-8 provincial curriculum documents; current learning

theories, teaching approaches and instructional planning in both discipline-based and interdisciplinary contexts; and assessment and evaluation of student learning. Not to be held with EDUB 1840 where the course section taken was "General Curriculum."

**EDUB 1620** Principles and Procedures of Second Language Teaching Cr.Hrs.3  
(Formerly 132.162) Examination of principles and demonstration of procedures for developing basic second language knowledge and skills in various contexts, e.g., ESL, EFL, AL, HL, IL.

**EDUB 1640** Teaching ESL Vocabulary and Pronunciation Cr.Hrs.3  
(Formerly 132.164) Systematic and principled procedures for teaching English vocabulary, and for teaching comprehensible and acceptable English pronunciation (vowels, diphthongs, semi-vowels, consonants, stress, rhythm, and intonation).

**EDUB 1650** Teaching ESL Grammar Cr.Hrs.3  
(Formerly 132.165) Examination of English sentence and discourse grammar, and demonstration of procedures of teaching grammar in communicative and academic contexts.

**EDUB 1660** Computers in Second Language Teaching Cr.Hrs.3  
(Formerly 132.166) Concepts and methodology in computer assisted language learning (CALL), with emphasis on using the Internet.

**EDUB 1680** Media Literacy Cr.Hrs.3  
(Formerly 132.168) This course will examine the role of the media in society and assist educators in all disciplines and levels to help students develop an informed and critical understanding of the mass media; including television, film, popular music, news, and advertising, etc. Not to be held with the former 063.162.

**EDUB 1710** Literature for Adolescents Cr.Hrs.3  
(Formerly 132.171) A survey of the literature available for adolescents. The course includes reading and discussion of the literature, and consideration of techniques for encouraging extensive reading. Not to be held with the former 063.204.

**EDUB 1720** Literature for Children Cr.Hrs.3  
(Formerly 132.172) A survey of the literature available for children. The course includes reading and discussion of the literature, and consideration of techniques for encouraging extensive reading. Not to be held with the former 063.212.

**EDUB 1730** Art Across the Curriculum Cr.Hrs.3  
(Formerly 132.173) This course will emphasize the importance of visual learning and its potential for teaching in the various curriculum areas at all levels. Opportunities for studio work, discussion and planning will be provided.

**EDUB 1740** Drama Across the Curriculum Cr.Hrs.3  
(Formerly 132.174) For all students, specialist and non-specialist, who wish to develop a greater understanding and practice of drama in the classroom across the curriculum.

**EDUB 1750** Basic Experiences in Movement and Dance Education Cr.Hrs.3  
(Formerly 132.175) A study of teaching movements/dance



education in Early (K-4) and Middle Years (5-8) schools. For both classroom teachers and physical education specialists, the course covers all traditional areas of movement instruction as well as movements' role across the curriculum. Not to be held with the former 081.212 and 081.213.

**EDUB 1760** Historical Development of Physical Science up to the 20th Century Cr.Hrs.3  
(Formerly 132.176) The major ideas and discoveries in science of the Ionians and the Greeks, the scientific revolution of the 16th and 17th centuries, and the 'modern' period of science, up to the end of the 19th century will be explored with an emphasis on science education and scientific literacy. Not to be held with the former 081.203.

**EDUB 1780** Integration of Technological Literacy Across the K-12 Curriculum Cr.Hrs.3  
(Formerly 132.178) Training teachers to analyze subject matter content, to identify potential to teach about technological principles within the content area, and to develop specific teaching and learning interventions to infuse technological literacy across content. Not to be held with the former 081.153.

**EDUB 1800** Recent Developments in Learning and Teaching Senior Years Mathematics Cr.Hrs.3  
(Formerly 132.180) The study of selected topics in mathematics in Senior Years. Not to be held with the former 081.302. Corequisites: EDUB 1250, EDUB 1500, and EDUB 1980.

**EDUB 1820** Language and Content Instruction of ESL/Bilingual Students Cr.Hrs.3  
(Formerly 132.182) Principles and procedures of teaching ESL/bilingual students in subject-area classrooms, using content-based language instruction and language sensitive content instruction. Not to be held with the former 132.161 or 063.152 or 063.322.

**EDUB 1830** La pédagogie du français de base aux niveaux intermédiaire et de la jeune enfance Cr.Hrs.3  
(Formerly 132.183) Ce cours examine les principes fondamentaux et la mise en pratique de l'enseignement de l'apprentissage du français langue seconde au niveau intermédiaire ainsi qu'au niveau de la jeune enfance. L'accent est mis sur les pratiques pédagogiques de l'approche communicative expérientielle. Prerequisite: 18 credit hours of French or permission of instructor.

**EDUB 1840** Recent Developments in CTL 1 Cr.Hrs.3  
(Formerly 132.184) The study of selected topics in curriculum, teaching, and learning.

**EDUB 1850** Recent Developments in CTL 2 Cr.Hrs.3  
(Formerly 132.185) The study of selected topics in curriculum, teaching and learning.

**EDUB 1860** Practicum in Teaching English as a Second Language (TESL) Cr.Hrs.3  
(Formerly 132.186) Practical second language teaching experiences, including: observing recorded and live teaching, planning lessons and units, micro and live teaching, and reflective practice. This course is graded pass/fail. Not to be held with the former 132.163. Pre- or corequisites: EDUB 1620 (or 132.162), EDUB 1640 (or 132.164), and EDUB 1650 (or 132.165).

**EDUB 1870** Practical Work in School Science Cr.Hrs.3  
(Formerly 132.187) This course, which is appropriate for early, middle and senior teacher candidates, will critically examine the role of practical work in the teaching and learning of school science. Topics will include: demonstrations, experiments, investigations, field experiences, simulations, data collection and interpretation, new educational technologies, assessment and laboratory safety.

**EDUB 1940** Integrated Programs School Experience 1 Cr.Hrs.3  
(Formerly 132.194) For students in the Integrated Bachelor of Human Ecology/Bachelor of Education and Bachelor of Music/Bachelor of Education programs. Practical teaching experience in schools under the guidance and supervision of faculty members and collaborating teachers. This course is graded pass/fail. Prerequisite: EDUB 1200 (or 132.120) for Integrated B.Mus./B.Ed. and EDUB 1240 (or 132.124) for Integrated B.H.Ecol./B.Ed. Corequisite: EDUB 1520 (or 132.152).

**EDUB 1950** Integrated Programs School Experience 2 Cr.Hrs.3  
(Formerly 132.195) For students in the Integrated Bachelor of Human Ecology/Bachelor of Education and Bachelor of Music/Bachelor of Education programs. A continuation of practical teaching experience in schools under the guidance and supervision of faculty members and collaborating teachers. This course is graded pass/fail. Prerequisite: EDUB 1940 (or 132.194); EDUB 2240 (or 132.224) for Integrated B.Mus./B.Ed. and EDUB 2290 (or 132.229) for Integrated B.H.Ecol./B.Ed. corequisite: EDUB 1530 (or 132.153).

**EDUB 1960** Early Years School Experience 1 Cr.Hrs.6  
(Formerly 132.196) Practical teaching experience in Early Years schools under the guidance and supervision of faculty members and collaborating teachers. The practicum will be closely integrated with the study of curriculum and instruction at the Early Years level. This course is graded pass/fail. Not to be held with the former 063.190. Corequisite: EDUB 1000 (or 132.100), EDUB 1010 (or 132.101), EDUB 1020 (or 132.102), EDUB 1030 (or 132.103), EDUB 1040 (or 132.104), EDUB 1050 (or 132.105), EDUB 1060 (or 132.106); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1990 (or 132.199).

**EDUB 1970** Middle Years School Experience 1 Cr.Hrs.3  
(Formerly 132.197) Practical teaching experience in Middle Years schools under the guidance and supervision of faculty members and collaborating teachers. The practicum will be closely integrated with the study of curriculum and instruction at the Middle Years level. This course is graded pass/fail. Not to be held with the former 063.191. Corequisite: EDUB 1100 (or 132.110), EDUB 1110 (or 132.111), EDUB 1120 (or 132.112), EDUB 1130 (or 132.113), EDUB 1140 (or 132.114); pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 1990 (or 132.199).

**EDUB 1980** Senior Years School Experience 1 Cr.Hrs.6  
(Formerly 132.198) Practical teaching experience in the schools under the guidance and supervision of faculty members and collaborating teachers. The practicum will be closely integrated with the study of curriculum and instruction at the Senior Years level. This course is graded pass/fail.



Corequisite: EDUB 1500 (or 132.150); Curriculum and Instruction courses for the major and minor; pre- or corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUB 1510 (or 132.151), EDUB 1990 (or 132.199).

**EDUB 1990** Teacher and Technology Cr.Hrs.3 (Formerly 132.199) An introduction to educational and information technology in the classroom. Focus will be on the utilization of technology, the development of information skills for teachers and critical analyses of the potential of educational technology. Not to be held with the former 081.182 or 081.218.

## SECTION 10: Department of Curriculum, Teaching and Learning -2000 Level

**EDUB 2000** Early Years Philosophy and Practice 2 Cr.Hrs.1 (Formerly 132.200) An advanced interdisciplinary study and application of curriculum, instructional approaches and techniques relevant to Early Years education (Kindergarten to Grade 4). Prerequisite: successful completion of year one; corequisite: EDUB 2010 (or 132.201), EDUB 2020 (or 132.202), EDUB 2030 (or 132.203), EDUB 2040 (or 132.204), EDUB 2050 (or 132.205), EDUB 2060 (or 132.206), EDUB 2070 (or 132.207), EDUB 2080 (or 132.208), EDUB 2960 (or 132.296); pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281).

**EDUB 2010** Early Years Curriculum and Instruction in Language and Literacy 2 Cr.Hrs.3 (Formerly 132.201) An advanced interdisciplinary study and application of curriculum, instructional approaches and techniques relevant to Early Years education (Kindergarten to Grade 4). Prerequisite: successful completion of year one; corequisite: EDUB 2000 (or 132.200), EDUB 2020 (or 132.202), EDUB 2030 (or 132.203), EDUB 2040 (or 132.204), EDUB 2050 (or 132.205), EDUB 2060 (or 132.206), EDUB 2070 (or 132.207), EDUB 2080 (or 132.208), EDUB 2960 (or 132.296); pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281).

**EDUB 2020** Early Years Curriculum and Instruction in Music and Movement 2 Cr.Hrs.2 (Formerly 132.202) An advanced interdisciplinary study and application of curriculum, instructional approaches and techniques relevant to Early Years education (Kindergarten to Grade 4). Prerequisite: successful completion of year one; corequisite: EDUB 2000 (or 132.200), EDUB 2010 (or 132.201), EDUB 2030 (or 132.203), EDUB 2040 (or 132.204), EDUB 2050 (or 132.205), EDUB 2060 (or 132.206), EDUB 2070 (or 132.207), EDUB 2080 (or 132.208), EDUB 2960 (or 132.296); pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281).

**EDUB 2030** Early Years Curriculum and Instruction in Art and Drama 2 Cr.Hrs.1 (Formerly 132.203) An advanced interdisciplinary study and application of curriculum, instructional approaches and techniques relevant to Early Years education (Kindergarten to Grade 4). Prerequisite: successful completion of year one; corequisite: EDUB 2000 (or 132.200), EDUB 2010 (or 132.201), EDUB 2020 (or 132.202), EDUB 2040 (or 132.204), EDUB 2050 (or 132.205), EDUB 2060 (or

132.206), EDUB 2070 (or 132.207), EDUB 2080 (or 132.208), EDUB 2960 (or 132.296); pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281).

**EDUB 2040** Early Years Curriculum and Instruction in Social Studies 2 Cr.Hrs.2

(Formerly 132.204) An advanced interdisciplinary study and application of curriculum, instructional approaches and techniques relevant to Early Years education (Kindergarten to Grade 4). Prerequisite: successful completion of year one; corequisite: EDUB 2000 (or 132.200), EDUB 2010 (or 132.201), EDUB 2020 (or 132.202), EDUB 2030 (or 132.203), EDUB 2050 (or 132.205), EDUB 2060 (or 132.206), EDUB 2070 (or 132.207), EDUB 2080 (or 132.208), EDUB 2960 (or 132.296); pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281).

**EDUB 2050** Early Years Curriculum and Instruction in Mathematics 2 Cr.Hrs.2

(Formerly 132.205) An advanced interdisciplinary study and application of curriculum, instructional approaches and techniques relevant to Early Years education (Kindergarten to Grade 4). Prerequisite: successful completion of year one; corequisite: EDUB 2000 (or 132.200), EDUB 2010 (or 132.201), EDUB 2020 (or 132.202), EDUB 2030 (or 132.203), EDUB 2040 (or 132.204), EDUB 2060 (or 132.206), EDUB 2070 (or 132.207), EDUB 2080 (or 132.208), EDUB 2960 (or 132.296); pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281).

**EDUB 2060** Early Years Curriculum and Instruction in Science and Health 2 Cr.Hrs.2

(Formerly 132.206) An advanced interdisciplinary study and application of curriculum, instructional approaches and techniques relevant to Early Years education (Kindergarten to Grade 4). Prerequisite: successful completion of year one; corequisite: EDUB 2000 (or 132.200), EDUB 2010 (or 132.201), EDUB 2020 (or 132.202), EDUB 2030 (or 132.203), EDUB 2040 (or 132.204), EDUB 2050 (or 132.205), EDUB 2070 (or 132.207), EDUB 2080 (or 132.208), EDUB 2960 (or 132.296); pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281).

**EDUB 2070** Early Years Curriculum and Instruction Children's Literature Cr.Hrs.1

(Formerly 132.207) An advanced interdisciplinary study and application of curriculum, instructional approaches and techniques relevant to Early Years education (Kindergarten to Grade 4). Prerequisite: successful completion of year one; corequisite: EDUB 2000 (or 132.200), EDUB 2010 (or 132.201), EDUB 2020 (or 132.202), EDUB 2030 (or 132.203), EDUB 2040 (or 132.204), EDUB 2050 (or 132.205), EDUB 2060 (or 132.206), EDUB 2080 (or 132.208), EDUB 2960 (or 132.296); pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281).

**EDUB 2080** Early Years Multi-Language Development Cr.Hrs.1

(Formerly 132.208) An advanced interdisciplinary study and application of curriculum, instructional approaches and techniques relevant to Early Years education (Kindergarten to Grade 4). Prerequisite: successful completion of year one; corequisite: EDUB 2000 (or 132.200), EDUB 2010 (or 132.201), EDUB 2020 (or 132.202), EDUB 2030 (or 132.203), EDUB 2040 (or 132.204), EDUB 2050 (or 132.205), EDUB 2060 (or 132.206), EDUB 2070 (or 132.207), EDUB 2960 (or 132.296); pre- or corequisite:



EDUA 2800 (or 129.280), EDUA 2810 (or 129.281).

**EDUB 2100** Teaching Language Arts in the Middle Years Cr.Hrs.3  
(Formerly 132.210) A study of curriculum, instructional approaches, and techniques relevant to language and literacy at the Middle Years level, with emphasis on writing instruction, the teaching of literature, and writing across the curriculum. Prerequisite: successful completion of year one; corequisite: EDUB 2110 (or 132.211), EDUB 2120 (or 132.212), EDUB 2130 (or 132.213), EDUB 2140 (or 132.214), EDUB 2150 (or 132.215), EDUB 2400 (or 132.240), EDUB 2970 (or 132.297).

**EDUB 2110** Teaching Social Studies in the Middle Years Cr.Hrs.3  
(Formerly 132.211) A study of curriculum and instruction in Middle Years social studies education, with particular emphasis on its theories, developments, instructional approaches, evaluation, and contemporary issues. Prerequisite: successful completion of year one; corequisite: EDUB 2100 (or 132.210), EDUB 2120 (or 132.212), EDUB 2130 (or 132.213), EDUB 2140 (or 132.214), EDUB 2150 (or 132.215), EDUB 2400 (or 132.240), EDUB 2970 (or 132.297).

**EDUB 2120** Teaching Art in the Middle Years Cr.Hrs.2  
(Formerly 132.212) An overview of art processes and teaching strategies appropriate for Middle Years students, with an emphasis on general visual awareness, art appreciation and art production. Prerequisite: successful completion of year one; corequisite: EDUB 2100 (or 132.210), EDUB 2110 (or 132.211), EDUB 2130 (or 132.213), EDUB 2140 (or 132.214), EDUB 2150 (or 132.215), EDUB 2400 (or 132.240), EDUB 2970 (or 132.297).

**EDUB 2130** Teaching Science in the Middle Years Cr.Hrs.3  
(Formerly 132.213) This course will examine learning in Middle Years science from multi-perspectives. Contemporary teaching and learning models will be assessed. Unit and lesson plans will be developed using multi-voices in science. Prerequisite: successful completion of year one; corequisite: EDUB 2100 (or 132.210), EDUB 2110 (or 132.211), EDUB 2120 (or 132.212), EDUB 2140 (or 132.214), EDUB 2150 (or 132.215), EDUB 2400 (or 132.240), EDUB 2970 (or 132.297).

**EDUB 2140** Teaching Mathematics in the Middle Years Cr.Hrs.3  
(Formerly 132.214) A study of instructional approaches needed to teach mathematics at the Middle Years level. Prerequisite: successful completion of year one; corequisite: EDUB 2100 (or 132.210), EDUB 2110 (or 132.211), EDUB 2120 (or 132.212), EDUB 2130 (or 132.213), EDUB 2150 (or 132.215), EDUB 2400 (or 132.240), EDUB 2970 (or 132.297).

**EDUB 2150** Teaching Physical Education in the Middle Years Cr.Hrs.2  
(Formerly 132.215) This course introduces students to the rationale for, and methods of, teaching of health and physical education in the Middle Years grades. Prerequisite: successful completion of year one; corequisite: EDUB 2100 (or 132.210), EDUB 2110 (or 132.211), EDUB 2120 (or 132.212), EDUB 2130 (or 132.213), EDUB 2140 (or 132.214), EDUB 2400 (or 132.240), EDUB 2970 (or 132.297).

132.297).

**EDUB 2160** Teaching Music in Early/Middle Years Cr.Hrs.3  
(Formerly 132.216) The specialized study and application of curriculum, instructional approaches and techniques relevant to music education at the early and middle years levels (K-8). This course is intended for music specialists (music majors/minors, or with permission or instructor). Prerequisite: EDUB 1200 (or 132.120) and EDUB 1940 (or 132.194) or permission of instructor.

**EDUB 2200** Teaching Art in Senior Years Cr.Hrs.3  
(Formerly 132.220) A study of curriculum and instruction approaches relevant to teaching the visual arts at the Senior Years level. Prerequisite: successful completion of year one, EDUB 1200 (or 132.120); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2210** Teaching English Language Arts in Senior Years 2 Cr.Hrs.3  
(Formerly 132.221) The course will extend further the groundwork undertaken in the previous introductory course into the understanding and application of the principles and practices of teaching English language arts at the Senior Years level. Prerequisite: successful completion of year one; EDUB 1210 (or 132.121); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2220** Teaching Geography in Senior Years Cr.Hrs.3  
(Formerly 132.222) A study of curriculum and instructional approaches relevant to the teaching of geography at the Senior Years level. Prerequisite: successful completion of year one, EDUB 1230 (or 132.123); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2230** Teaching History in Senior Years Cr.Hrs.3  
(Formerly 132.223) A study of curriculum, instructional approaches relevant to the teaching of history at the Senior Years level. Prerequisite: successful completion of year one, EDUB 1230 (or 132.123); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2240** Teaching Music in Senior Years Cr.Hrs.3  
(Formerly 132.224) A study of curriculum, instructional approaches and techniques relevant to the teaching of music at the Senior Years level. Senior Years: Prerequisite: successful completion of year one, EDUB 1200 (or 132.120); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251); Integrated B.Mus./B.Ed.: prerequisite: EDUB 1200 (or 132.120), EDUB 1520 (or 132.152), EDUB 1940 (or 132.194).



**EDUB 2250** Teaching Drama and Theatre in Senior Years Cr.Hrs.3  
(Formerly 132.225) A study of curriculum and instructional approaches relevant to the teaching of drama and theatre at the Senior Years level. Prerequisite: successful completion of year one, EDUB 1200 (or 132.120); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2260** Teaching Biology in Senior Years Cr.Hrs.3  
(Formerly 132.226) A study of curriculum and instructional approaches relevant to the teaching of biology at the Senior Years level. Prerequisite: successful completion of year one; EDUB 1270 (or 132.127); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298). Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2270** Teaching Chemistry in Senior Years Cr.Hrs.3  
(Formerly 132.227) A study of curriculum and instructional approaches relevant to the teaching of Chemistry at the Senior Years level. Prerequisite: successful completion of year one; EDUB 1270 (or 132.127), corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre-or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2280** Teaching General Science in Senior Years Cr.Hrs.3  
(Formerly 132.228) The study of curriculum and instructional approaches relevant to the teaching of general science at the Senior Years level. Prerequisite: successful completion of year one; EDUB 1270 (or 132.127); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2290** Teaching Human Ecology in Senior Years 2 Cr.Hrs.3  
(Formerly 132.229) A continuation of the study of curriculum and instructional approaches relevant to the teaching of human ecology at the Senior Years level. Senior Years: prerequisite: successful completion of year one; EDUB 1240 (or 132.124); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251); Integrated B.H.Ecol./B.Ed.: prerequisite: EDUB 1240 (or 132.124), EDUB 1520 (or 132.152), EDUB 1940 (or 132.194).

**EDUB 2300** Teaching Mathematics in Senior Years 2 Cr.Hrs.3  
(Formerly 132.230) A continuation of the study of curriculum and instructional approaches relevant to teaching mathematics at the Senior Years level. Prerequisite: successful completion of year one, EDUB 1250 (or 132.125); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2310** Teaching Physical Education/Health Education in Senior Years 2 Cr.Hrs.3  
(Formerly 132.231) A continuation of the study of curriculum and instructional approaches relevant to the teaching of physical education and health education at the Senior Years level. Prerequisite: successful completion of year one, EDUB 1260 (or 132.126); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2320** Teaching Physics in Senior Years Cr.Hrs.3  
(Formerly 132.232) A study of curriculum and instructional approaches relevant to the teaching of physics at the Senior Years level. Prerequisite: successful completion of year one, EDUB 1270 (or 132.127); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251). Offered 2003-04 and every other year thereafter.

**EDUB 2330** Teaching Computer Science in Senior Years Cr.Hrs.3  
(Formerly 132.233) A study of curriculum and instructional approaches relevant to the teaching of computer science at the Senior Years level. Prerequisite: successful completion of year one, EDUB 1270 (or 132.127); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251). Offered 2004-2005 and every other year thereafter.

**EDUB 2340** L'enseignement du français de Base au Niveau Secondaire 2 Cr.Hrs.3  
(Formerly 132.234) La deuxième partie du cours constitue un approfondissement des éléments-clés ainsi qu'une introduction aux nouveaux sujets particuliers en vue de développer chez l'étudiant une philosophie personnelle de l'enseignement du français langue seconde. Prerequisite: successful completion of year one, EDUB 1280 (or 132.128); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251).

**EDUB 2350** Teaching a Heritage, Aboriginal, or International Language 2 Cr.Hrs.3  
(Formerly 132.235) Curriculum applications and practice in teaching a language other than English or French. Senior Years: prerequisite: successful completion of year one, EDUB 1350 (or 132.135) or EDUB 1220 (or 132.122); corequisite: EDUB 2500 (or 132.250), EDUB 2980 (or 132.298), Curriculum and Instruction for Year 2 major/minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251); Early/Middle Years: Complementary Course; prerequisite: EDUB 1350 (or 132.135) or the former 132.122.

**EDUB 2400** Teaching in the Middle Years Cr.Hrs.2  
(Formerly 132.240) Examines the assumptions underlying the goals of Middle Years education. Topics include unit and lesson planning, special topics in adolescent development, classroom management, student evaluation, and integrating curriculum. Prerequisite: successful completion of year one; corequisite: EDUB 2970 (or 132.297), EDUB 2100 (or



132.210), EDUB 2110 (or 132.211), EDUB 2120 (or 132.212), EDUB 2130 (or 132.213), EDUB 2140 (or 132.214), EDUB 2150 (or 132.215).

**EDUB 2500** Themes in Senior Years Education Cr.Hrs.3 (Formerly 132.250) Examination of selected themes or issues relevant to Senior Years education, and the development of the beginning teacher's personal professional identity. Course activities will be coordinated with in-school experiences and will vary from year to year. Senior Years: Prerequisite: successful completion of year one; corequisite: EDUB 2980 (or 132.298), six credit hours year 2 Curriculum and Instruction courses specific to major and minor. Integrated B.Mus./B.Ed. and B.H.Ecol./B.Ed.: Prerequisite: successful completion of years 1-4.

**EDUB 2510** Language and Literacy Across the Curriculum Cr.Hrs.3 (Formerly 132.251) An introduction to language as a medium of teaching and learning and how teachers of all content areas can apply language to enhance students' understanding of subject area content. Prerequisite: Senior Years: successful completion of year one. Integrated B.Mus./B.Ed. and B. H.Ecol./B.Ed.: successful completion of years 1-4.

**EDUB 2960** Early Years School Experience 2 Cr.Hrs.6 (Formerly 132.296) A continuation of practical teaching experience in Early Years schools under the guidance and supervision of faculty members and collaborating teachers. The practicum will be closely integrated with the study of curriculum and instruction at the Early Years level. This course is graded pass/fail. Prerequisite: successful completion of year one; corequisite: EDUB 2000 (or 132.200), EDUB 2010 (or 132.201), EDUB 2020 (or 132.202), EDUB 2030 (or 132.203), EDUB 2040 (or 132.204), EDUB 2050 (or 132.205), EDUB 2060 (or 132.206), EDUB 2070 (or 132.207), EDUB 2080 (or 132.208); pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281).

**EDUB 2970** Middle Years School Experience 2 Cr.Hrs.9 (Formerly 132.297) A continuation of practical teaching experience in Middle Years schools under the guidance and supervision of faculty members and collaborating teachers. The practicum will be closely integrated with the study of curriculum and instruction at the Middle Years level. This course is graded pass/fail. Prerequisite: successful completion of year one; corequisite: EDUB 2100 (or 132.210), EDUB 2110 (or 132.211), EDUB 2120 (or 132.212), EDUB 2130 (or 132.213), EDUB 2140 (or 132.214), EDUB 2150 (or 132.215), and EDUB 2400 (or 132.240).

**EDUB 2980** Senior Years School Experience 2 Cr.Hrs.6 (Formerly 132.298) A continuation of practical teaching experience under the guidance and supervision of faculty members and collaborating teachers. The practicum will be closely integrated with the study of curriculum and instruction at the Senior Years level. This course is graded pass/fail. Senior Years: prerequisite: successful completion of year one; corequisite: EDUB 2500 (or 132.250) and six credit hours year two curriculum and instruction courses specific to major and minor; pre- or corequisite: EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2510 (or 132.251); Integrated B.Mus./B.Ed. and B.H.Ecol./B.Ed.: prerequisite: successful completion of years one to four

inclusive; corequisite: EDUA 1800 (or 129.180), EDUA 1810 (or 129.181), EDUA 2800 (or 129.280), EDUA 2810 (or 129.281), EDUB 2500 (or 132.250) (Early/Middle Years Music specialization take an Education complementary course), EDUB 2510 (or 132.251), (Early/Middle Years Music specialization take an Education complementary course); pre- or corequisite: EDUB 1990 (or 132.199).

## SECTION 10: Department of Curriculum, Teaching and Learning -5000 Level

**EDUB 5012** Video Art, Culture, and Education Cr.Hrs.3 This course will focus on fostering students pedagogical, historical, theoretical, and sociological knowledge, as well as creative video skills. Students will learn about developing and implementing video across the curricula from grade 1 to grade 12 in order to incorporate video making and current viewing practices into classrooms. May not be held for credit with EDUB 1840 or EDUB 5220 where the title is 'Video Art, Culture, and Education.'

**EDUB 5040** Theory and Practice of Teaching Art (Elementary) Cr.Hrs.6 (Formerly 132.504) The theory and practice of teaching Art in the Elementary School will be examined through an inquiry into both the development of the child through his/her art expression and related curricular experiences. Not to be held with the former 063.518.

**EDUB 5060** Theory and Practice of Teaching Art in the Senior Years 1 Cr.Hrs.3 (Formerly 132.506) An overview of major aspects of Art Education in the context of Senior Years 1 curriculum through a study of current theory, a variety of studio areas and related aesthetic concepts. Not to be held with the former 063.546.

**EDUB 5070** Theory and Practice of Teaching Art in the Senior Years 2 Cr.Hrs.3 (Formerly 132.507) An examination of major aspects of art education in the context of the Senior Years 2 curriculum through an in-depth study of selected theoretical topics, studio areas and related aesthetic concepts. Not to be held with the former 063.547.

**EDUB 5100** Developing Competency Skills in Enterprise Education 1 Cr.Hrs.3 (Formerly 132.510) Promotes the development and integration of skills of creativity, innovation, self-reliance and responsibility in students, within the framework of an enterprise education/entrepreneurship paradigm. Participants develop teaching strategies and materials and learn to integrate these skills into current educational practices. Corequisite: EDUB 5110 (132.511).

**EDUB 5110** Developing Competency Skills in Enterprise Education 2Cr. Hrs. 3 (Formerly 132.511) This course continues the promotion and application of student competency skills, within the framework of an enterprise education/entrepreneurship paradigm. Participants plan and organize a school, community or business venture, develop plans for the promotion and marketing of the product or service, arrange financial support, and make a presentation of their venture



plan to a panel of evaluators. Corequisite: [EDUB 5100](#) (132.510).

**EDUB 5120** Music in the Early Years/Middle Years School 1 Cr.Hrs.3

(Formerly 132.512) A course to assist classroom teachers plan for music making activities based on knowledge and proficiency in the use of Orff instruments and recorder. Not to be held with the former 063.552.

**EDUB 5130** Music in the Early Years/Middle Years School 2 Cr.Hrs.3

(Formerly 132.513) A course to assist classroom teachers plan for music making activities based on knowledge and proficiency in the use of a wide range of string instruments (guitar, baritone ukulele, dulcimer, etc). Not to be held with the former 063.553.

**EDUB 5140** Special Methods in Music 1 Cr.Hrs.3

(Formerly 132.514) An advanced study of the Orff method as it applies to Early and Middle Years schools with emphasis on ensemble performance. The course is designed for the music specialist. Not to be held with the former 063.554.

**EDUB 5150** Special Methods in Music 2 Cr.Hrs.3

(Formerly 132.515) An advanced study of the Kodaly method as it applies to Early and Middle Years schools with emphasis on the contributions of the method to fine choral performance. The course is designed for the music specialist. Not to be held with the former 063.555.

**EDUB 5160** School Band Cr.Hrs.3

(Formerly 132.516) An advanced study of the methods for initiating and continuing a band in Middle and Senior Years schools with emphasis on the contributions of a band program to Middle Years education. Not to be held with the former 063.556.

**EDUB 5190** School Music Productions Cr.Hrs.3

(Formerly 132.519) A study of the principles and procedures for presenting school music productions. Not to be held with the former 063.559.

**EDUB 5200** Readings in Curriculum, Teaching and Learning 1 Cr.Hrs.3

(Formerly 132.520) Readings and research in special areas of curricular study related to curriculum, teaching and learning.

**EDUB 5210** Readings in Curriculum, Teaching and Learning 2 Cr.Hrs.3

(Formerly 132.521) Readings and research in special areas of curricular study related to curriculum, teaching and learning.

**EDUB 5220** Recent Developments in Curriculum, Teaching and Learning 1 Cr.Hrs.3

(Formerly 132.522) An opportunity to examine the theoretical bases for, and practical application of, recent or emerging developments in the area.

**EDUB 5230** Recent Developments in Curriculum, Teaching and Learning 2 Cr.Hrs.3

(Formerly 132.523) A continuation of certain topics of EDUB 5220 (132.522) to extend and develop the study previously undertaken in these areas.

**EDUB 5250** Music: Advanced Choral Methods Cr.Hrs.3 (Formerly 132.525) Advanced methods in choral instruction and conducting through a study of choral literature related to school music programs. Not to be held with the former 063.565.

**EDUB 5330** Teaching Language and Literacy in the Content Areas Cr.Hrs.3

(Formerly 132.533) An examination of approaches to literacy in the content areas (science, mathematics, social studies, etc); emphasis on strategies for reading, writing, and studying, materials, and material assessment, procedures, and supporting research. Not to be held with the former 132.531 or 063.571.

**EDUB 5350** Current Issues in Language and Literacy Cr.Hrs.3

(Formerly 132.535) A special topics course designed to update students on the most recent developments in Language and Literacy Education.

**EDUB 5360** Children's Literature Cr.Hrs.3

(Formerly 132.536) The nature and psychology of literature for children in the elementary grades. Areas for consideration include an examination of materials, use of evaluative criteria to assess the materials, and research findings concerning development, interest and use of the material. Not to be held with EDUB 5361 or the former 063.544.

**EDUB 5370** Adolescent Literature Cr.Hrs.3

(Formerly 132.537) The nature and psychology of literature for students in Grades 7-12. Areas for consideration include an examination of materials, use of evaluative criteria to assess the materials, and research findings concerning development, interest and use of the material. Not to be held with EDUB 5371 or the former 063.545.

**EDUB 5380** Theory and Practice in Written Composition Cr.Hrs.3

(Formerly 132.538) A course designed to explore the nature of written composition and to provide practice in various types of writing. Not to be held with the former 063.584.

**EDUB 5390** The Teaching of Written Composition Cr.Hrs.3

(Formerly 132.539) A course designed to assist teachers in organizing and implementing writing programs. Consideration will be given to motivational strategies, useful writing activities and exercises, and practice in editing and evaluation. Not to be held with the former 063.585.

**EDUB 5400** Diagnostic and Remedial Techniques in Language Arts Cr.Hrs.6

(Formerly 132.540) Diagnosis and correction at the classroom level. Opportunities for detailed analysis of diagnostic instruments. Practical aspects include diagnosis of language arts problems, prescriptions, and correction on the basis of evaluation. Not to be held with the former 063.599.

**EDUB 5470** Recent Developments in Curriculum: Mathematics and Natural Sciences 1 Cr.Hrs.3

(Formerly 132.547) This course will provide an opportunity to examine the theoretical bases for, and practical application of, recent or emerging developments in the area.



**EDUB 5480** Recent Developments in Curriculum: Mathematics and Natural Sciences 2 Cr.Hrs.3 (Formerly 132.548) A continuation of certain topics of EDUB 5470 to extend and develop the previous study undertaken in these areas.

**EDUB 5510** ESL Materials Development and Practicum Cr.Hrs.3  
A general survey of published ESL instructional materials will form the basis for students to develop lesson materials to be demonstrated in a supervised practicum. Not to be held with the former 063.587. Prerequisites or concurrent: EDUB 5580 (C) and instructor's permission.

**EDUB 5512** Teacher Development and Leadership in Second Language Education Cr.Hrs.3  
This course explores current approaches in the development of second language teachers and initiatives to facilitate leadership in programs inclusive of language learners.

**EDUB 5520** Grammar in ESL Learning and Instruction Cr.Hrs.3 (Formerly 132.552) A survey of English grammar and its applications to teaching all levels of ESL, from beginning to very advanced. Lectures, readings, group discussions, and demonstrations are designed to develop knowledge and skills necessary to teach oral and written grammar in traditional and innovative ways. Not to be held with the former 063.596.

**EDUB 5530** ESL and Content Instruction Cr.Hrs.3 (Formerly 132.553) Principles and procedures of teaching ESL/bilingual students in subject-area classrooms, using content-based language instruction and language sensitive content instruction.

**EDUB 5540** Vocabulary and Pronunciation Instruction Cr.Hrs.3 (Formerly 132.554) Principles and procedures in teaching English vocabulary and pronunciation for effective communication (sounds, spellings, word and sentence stress, rhythm, intonation, connected speech, integration). Not to be held with EDUB 1640 (132.164).

**EDUB 5550** Library Reference and Informational Materials Cr.Hrs.6 (Formerly 132.555) Principles of reference and research with special emphasis on interdisciplinary investigation; the problems of access to information; types of reference sources, their evaluation and selection for library reference collections; services to library users. Not to be held with the former 063.541.

**EDUB 5580** Fundamentals of ESL (English Second Language) Instruction Cr.Hrs.3 (Formerly 132.558) Examination of principles and demonstration of procedures for teaching ESL in Canada and EFL overseas. Not to be held with the former courses 132.550 or 063.586.

**EDUB 5600** The Teaching of Social Studies in the Early and Middle Years Cr.Hrs.3 (Formerly 132.560) This course concentrates on the teaching of social studies in schools from Kindergarten to approximately Grade Nine, with particular reference to the implications of social studies teachers of the characteristics of students at those levels. Not to be held with the former

132.567 or 063.595

**EDUB 5660** Theoretical Foundations of Social Studies Cr.Hrs.3 (Formerly 132.566) This course examines recent developments in social studies education. It aims to familiarize students with the debates, the research and the innovations (successful and otherwise) that have characterized social studies curriculum. Not to be held with the former 063.594.

**EDUB 5690** Seminar in Business Education Cr.Hrs.6 (Formerly 132.569) Curriculum development; methodologies; evaluation and measurement; research. Not to be held with the former 081.514.

**EDUB 5760** Recent Developments in Mathematics Education Cr.Hrs.3 (Formerly 132.576) Reading and research in mathematics education (selected topics).

**EDUB 5770** Diagnosis and Remediation in Elementary School Mathematics Cr.Hrs.3 (Formerly 132.577) Diagnostic and remedial methods in elementary school mathematics. Not to be held with EDUB 5771 or the former 081.558.

**EDUB 5840** Internet Pedagogy Cr.Hrs.3 (Formerly 132.584) Theory and practice of teaching and learning with the Internet. Focus on instructional applications of the Internet, for all levels from K-12 as well as adult, post-secondary and training settings. Current research will be examined and monitored for its relevance to this fast-changing field.

**EDUB 5850** Theory and Practice of Designing and Developing Web-based Courses Cr.Hrs.3 (Formerly 132.585) Theory and practice of the design, development and evaluation of on-line web-based distance education courses for K-12 through adult/post-secondary programs.

**EDUB 5860** Project Management in Education and Training Cr.Hrs.3 (Formerly 132.586) Theory and practice of project management principles in education and training. Emphasis on application of concepts and procedures of educational project management including planning and proposal creation for developmental and/or research activities in educational agencies.

**EDUB 5870** Mentoring for Teachers Cr.Hrs.3 (Formerly 132.587) An examination of mentoring practices with particular focus on educative ways of mentoring teacher candidates and new teachers

**EDUB 5940** Instructional Product Development Cr.Hrs.3 (Formerly 132.594) Systematic development of an instructional product. Includes needs assessment, goal setting, writing objectives, task analyses, product development, evaluation techniques. Not to be held with the former 081.532.



## SECTION 10: Department of Educational Administration, Foundation and Psychology -1000 Level

**EDUA 1500** Aboriginal Education Cr.Hrs.3  
(Formerly 129.150) A study of fundamental issues, philosophies, and models of Aboriginal education. Cultural, spiritual, social, and political perspectives regarding Aboriginal education will be critically explored.

**EDUA 1502** Measurement and Evaluation Cr.Hrs.3  
Theory and practical application are stressed in the preparation, use and interpretation of various approaches to assessing student learning. May not hold with the former 043.301, and also may not be held with 129.153 or EDUA 1530, "Recent Developments in Educational Psychology" where the course section taken was "Measurement and Evaluation."

**EDUA 1510** Foundations of Moral and Religious Education Cr.Hrs.3  
(Formerly 129.151) Examination of the theory and practice of moral and religious education, including curricular and pedagogical issues in both humanistic and religious perspectives.

**EDUA 1520** Recent Developments in Educational Administration and Foundations Cr.Hrs.3  
(Formerly 129.152) Topics will vary depending on the needs and interests of students, and will include specialized topics in educational administration and foundations.

**EDUA 1530** Recent Developments in Educational Psychology Cr.Hrs.3  
(Formerly 129.153) Topics will vary depending on the needs and interests of students, and will include specialized topics in educational psychology not studied in regular program courses.

**EDUA 1534** Unallocated Credit Cr.Hrs.3  
Campus Manitoba course.

**EDUA 1540** Cross-Cultural Education Cr.Hrs.3  
(Formerly 129.154) An examination of teacher attitudes, teaching techniques and curricular modifications which will facilitate learning in cross-cultural situations. Studies will focus on accommodation among cultural groups in rural and urban centres. Not to be held with the former 116.303.

**EDUA 1550** Communication and Interpersonal Relationships in Education Cr.Hrs.3  
(Formerly 129.155) The purpose of this course is to help teacher candidates increase their awareness, understanding, and proficiency in communication and interpersonal relationships. Emphasis in this course is on the integration of theory, research, and practice in the areas of communication and interpersonal relationships.

**EDUA 1560** Adult Learning and Development Cr.Hrs.3  
(Formerly 129.156) A study of the extensive knowledge of lifespan development and its importance for adult education practitioners. With a focus on development, learning and change, emphasis is placed on the importance of context and individual differences in adult learning.

**EDUA 1570** Foundations of Adult Education Cr.Hrs.3  
(Formerly 129.157) An introduction to the field of Education from a local and global perspective. Attention will be given to historical movements in adult education, philosophical perspectives, participation and motivation, transformative perspectives on adult learning, and current and future perspectives on adult education. Not to be held with EDUA 5300 (or 129.530) or former 116.532.

**EDUA 1580** Program Planning in Adult Education Cr.Hrs.3  
(Formerly 129.158) An introduction to the theory and practice of program planning in adult education. Attention is given to the context in which learning is to take place, the structuring of adult learning opportunities, and the logistics of successful programming.

**EDUA 1590** Facilitating Adult Education Cr.Hrs.3  
(Formerly 129.159) A study of theoretical and practical aspects of facilitation in adult education.

**EDUA 1800** Psychology of Learning and Instruction 1: Theory and Practice Cr.Hrs.3  
(Formerly 129.180) An examination of theoretical concepts and practical issues related to the learning and development of learners as individuals in classrooms and other settings. Not to be held with the former 043.202.

**EDUA 1810** School and Society 1: The Social Foundations of Education Cr.Hrs.3  
(Formerly 129.181) An examination of educational ideas and practices, especially schooling, in the context of a diverse society. The course focuses upon understanding schooling through historical, philosophical, sociological and cross-cultural perspectives. Not to be held with the former 116.101 or 037.101.

## SECTION 10: Department of Educational Administration, Foundations and Psychology -2000 Level

**EDUA 2800** Psychology of Learning and Instruction 2: Inclusive Special Education Cr.Hrs.3  
(Formerly 129.280) An examination of concepts and issues related to meeting the diverse needs of all students including methods and resources for accommodating student diversity in classrooms and schools. Not to be held with the former 043.305. Pre- or corequisite: EDUA 1800 (or 129.180).

**EDUA 2810** School and Society 2: Administrative Foundations of Education Cr.Hrs.3  
(Formerly 129.281) An examination of the form, functioning, and organizational aspects of contemporary schooling in Canada in the context of legislation, policy and public expectations. Not to be held with the former 116.301 or 059.301. Pre- or corequisite: EDUA 1810 (or 129.181).

## SECTION 10: Department of Educational Administration, Foundations and Psychology -5000 Level

**EDUA 5010** Introduction to Educational Administration Cr.Hrs.3  
(Formerly 129.501) A study of the basic concepts, tasks and



processes of administration as they apply to education. Not to be held with EDUA 5011 or the former 116.501.

**EDUA 5020** Principles of Curriculum Development Cr.Hrs.3 (Formerly 129.502) An examination of approaches to curriculum design. Influences on the design process, and aspects of implementation. Emphasis is given to teacher participation in creating curriculum. Not to be held with EDUA 5021 or the former 116.502.

**EDUA 5030** Management of Educational Institutions Cr.Hrs.3 (Formerly 129.503) A study of basic patterns of organization and the administrator's role in educational institutions. The focus is on decision making, communicating, planning and evaluating in educational institutions. Not to be held with EDUA 5031 or the former 116.503.

**EDUA 5040** Personnel Administration in Education Cr.Hrs.3 (Formerly 129.504) An examination of the administrator's relationships with other personnel in education, with emphasis on personnel policy, staff development and motivation. Not to be held with EDUA 5041 or the former 116.504.

**EDUA 5060** Principles of Instructional Supervision Cr.Hrs.3 (Formerly 129.506) An analysis of theoretical models of instruction and supervision and their application in education. Not to be held with EDUA 5061 or the former 116.506.

**EDUA 5080** Recent Developments in Educational Administration 1 Cr.Hrs.3 (Formerly 129.508) An opportunity to examine the theoretical bases for, and application of, recent or emerging developments in educational administration.

**EDUA 5090** Recent Developments in Educational Administration 2 Cr.Hrs.3 (Formerly 129.509) A continuation of certain topics of EDUA 5080 to extend and develop studies previously undertaken in these areas.

**EDUA 5100** Issues in the Administration of Education Cr.Hrs.3 (Formerly 129.510) An analysis of issues in the administration of educational organizations. Not to be held with EDUA 5101 or the former 116.510.

**EDUA 5200** Readings in Educational Foundations Cr.Hrs.3 (Formerly 129.520) Readings and research in selected areas of the study of education.

**EDUA 5210** Recent Developments in Educational Foundations 1 Cr.Hrs.3 (Formerly 129.521) An opportunity to examine the theoretical bases for, and application of, recent or emerging developments in educational foundations.

**EDUA 5230** Studies in International Education Cr.Hrs.3 (Formerly 129.523) An examination of educational issues and practices in other countries, especially those of the third world. Emphasis will be given to teaching and administration in developing countries. Not to be held with the former 116.525.

**EDUA 5480** Counselling Skills Cr.Hrs.3 (Formerly 129.548) Emphasis will be on the development of counselling skills such as attending and listening, reflection of content and feelings, feedback and self-disclosure, focusing and summarization. Not to be held with EDUA 5481 or the former 129.556 or 043.516. Prerequisite or concurrent: EDUA 5500 or EDUA 5501(129.550)(C). Course evaluated on a pass/fail basis. Enrolment limited.

**EDUA 5490** Field Placement in Counselling Cr.Hrs.3 (Formerly 129.549) A field-based counselling situation for students to apply counselling skills under qualified professionals in the field, and supported by university instructors. Not to be held with EDUA 5491 or the former 129.556 or 043.516. Prerequisite or concurrent: [EDUA 5500 or EDUA 5501 (129.550)(C)] and [EDUA 5480 or EDUA 5481 (129.548)(P)]. Course evaluated on a pass/fail basis. Enrolment limited.

**EDUA 5500** Theories and Issues in School Counselling Cr.Hrs.3 (Formerly 129.550) A study of the philosophy and theories of counselling, issues in school guidance and counselling. Not to be held with EDUA 5501 or the former 043.509.

**EDUA 5510** Elementary School Counselling Cr.Hrs.3 (Formerly 129.551) An examination of the role and functions of the counsellor in the elementary school. Not to be held with EDUA 5511 or the former 043.510. Prerequisite or concurrent: EDUA 5500 or EDUA 5501 (129.550)(C).

**EDUA 5520** Ethics in Counselling Cr.Hrs.3 (Formerly 129.552) In this course, participants will be introduced to the Codes of Ethics for counsellors. Major ethical issues related to the following topics will be discussed: informed consent, confidentiality, record-keeping, boundary issues, training and competence, clinical supervision and multicultural and diversity issues. Participants will get an opportunity to practice various ethical decision-making models.

**EDUA 5530** Secondary School Counselling Cr.Hrs.3 (Formerly 129.553) A study of counselling as related to secondary-school practice. Emphasis on the secondary-school counsellor's role and functions. Examination of the various counsellor services: educational, orientation, staff, etc. Not to be held with EDUA 5531 or the former 043.511. Prerequisite or concurrent: EDUA 5500 or EDUA 5501 (129.550)(C).

**EDUA 5540** Groups in Guidance Cr.Hrs.3 (Formerly 129.554) A study of groups, group leadership and related skill development, especially as related to a counsellor's functioning in the schools. Not to be held with EDUA 5541 the former 043.512. Prerequisite or concurrent: EDUA 5500 or EDUA 5501 (129.550)(C).

**EDUA 5550** Psychology of Human Relationships Cr.Hrs.3 (Formerly 129.555) A study of interpersonal relationships. A laboratory approach is used to increase the personal sensitivity of the participants to people. Particularly suitable for teachers, school administrators, and other professionals. Not to be held with EDUA 5551 or the former 043.515.

**EDUA 5570** Family Life Education Cr.Hrs.3 (Formerly 129.557) A study of human sexuality and family relationships. Consideration is given to research findings,



teaching resources and the methods, development, and cooperation with home and community. Not to be held with EDUA 5571 or the former 043.517.

**EDUA 5580** Career Development Cr.Hrs.3  
(Formerly 129.558) Study and application of theories of career development, occupational choice, and decision making; evaluation and design of self-knowledge programs in counselling for decision. Not to be held with EDUA 5581 or the former 043.513 or 043.545.

**EDUA 5590** Career Information Cr.Hrs.3  
(Formerly 129.559) A study of work, local employment, and training; analysis of career information; evaluation and design of career resource centres; a development study of career education. Not to be held with the former 043.514 or 043.546.

**EDUA 5600** Introduction to Inclusive Special Education Cr.Hrs.6  
(Formerly 129.560) A survey course for educators interested in inclusive special education - legislative, pedagogical, attitudinal and systemic barriers to inclusion and exemplary inclusive provisions are covered. Not to be held with EDUA 5601 or the former 043.518.

**EDUA 5610** Field Experience in Inclusive Special Education Cr.Hrs.6  
(Formerly 129.561) A field-based situation for full and part-time students to apply inclusive special education skills under the supervision of qualified school staff and supported by professional peer mentors and university instructors. Approximately 160 hours of field-based service required. Not to be held with the former 043.523. Prerequisite or concurrent: [EDUA 5600 or EDUA 5601(129.560)(C) or equivalent] and [EDUA 5630 or EDUA 5631 (129.563)(C) or equivalent] and [EDUA 5660 or EDUA 5661 (129.566)(C) or equivalent]. Course evaluated on a pass/fail basis.

**EDUA 5620** Teaching Children Through Alternative and Augmented Communication Cr.Hrs.3  
(Formerly 129.562) An examination of alternative and augmented communication issues, services, supports, and inclusive teaching and learning strategies. Not to be held with the former 043.533.

**EDUA 5630** Assessment and Instruction in Inclusive Special Education Cr.Hrs.6  
(Formerly 129.563) An examination of curriculum-based and classroom-based assessment to guide the instruction of students experiencing learning or behavioural difficulties in inclusive classrooms. Not to be held with EDUA 5631 or the former 043.536. Prerequisite or concurrent: EDUA 5600 or 5601 (129.560)(C) or equivalent.

**EDUA 5640** Inclusive Special Education: Early and Middle Years Cr.Hrs.3  
(Formerly 129.564) This course is designed for educators responsible for the integration of students with special learning needs into the early and/or middle years classroom. Not to be held with the former 043.537.

**EDUA 5650** Inclusive Special Education: High School and Transition to Adult Life Cr.Hrs.3  
(Formerly 129.565) This course is designed for those responsible for the education of students with special learning needs into high school. Not to be held with the

former 043.538.

**EDUA 5660** Organization and Delivery of Resource Program and Support Services Cr.Hrs.3  
(Formerly 129.566) A critical study of the nature of resource teacher programs and an analysis of factors influencing program development and effectiveness. Not to be held with EDUA 5661 or the former 043.539. Prerequisite or concurrent: EDUA 5600 (129.560)(C).

**EDUA 5670** Strategies for Organizing Inclusive Classrooms and Schools Cr.Hrs.3  
(Formerly 129.567) An examination of the organization and implementation of school-wide supports for access, learning, socialization, behaviour, family liaison, clinical engagement, and community services. Organizational strategies to enhance consultation, cooperation, collaboration and professional development are included. Not to be held with EDUA 5671 or the former 043.540. Prerequisite or concurrent: [EDUA 5600 or EDUA 5601 (129.560)(C) or equivalent] and [EDUA 5630 or EDUA 5631 (129.563)(C) or equivalent].

**EDUA 5680** Promoting Responsible Behaviour in Educational Settings Cr.Hrs.3  
(Formerly 129.568) The course is designed to provide teachers with an understanding of the needs of children who display maladaptive behaviours in a school setting. Conceptualization of behaviour disorders, identification/assessment procedures, and intervention strategies will be studied. The purpose of the course is to enable teachers to generate intervention strategies which are appropriate in an educational setting. Not to be held with EDUA 5681 or the former 043.542.

**EDUA 5690** Focus on Exceptionality: Gifted and Talented Cr.Hrs.3  
(Formerly 129.569) Students will be introduced to various topics and issues in the realm of gifted education, including theoretical models; relevant research, and appropriate teaching and assessment practices.

**EDUA 5710** Readings in Educational Psychology 1 Cr.Hrs.3  
(Formerly 129.571) Directed readings and study of topics in various aspects of education from the psychological viewpoint.

**EDUA 5730** Recent Developments in Educational Psychology 1 Cr.Hrs.3  
(Formerly 129.573) An opportunity to examine the theoretical bases for, and practical application of, recent or emerging developments in this area.

**EDUA 5740** Recent Developments in Educational Psychology 2 Cr.Hrs.3  
(Formerly 129.574) An opportunity to examine the theoretical bases for, and practical application of, recent or emerging developments in this area.

**EDUA 5760** Psychology of Instruction in Educational Contexts Cr.Hrs.3  
(Formerly 129.576) Designed primarily, although not exclusively, for classroom teachers and school personnel. A critical examination of major theoretical foundations and models of instruction. The course aims at the integration and application of traditional and emerging approaches and strategies of classroom instruction. Not to be held with the



former 043.544. Prerequisite: [EDUA 1800 (129.180)(C)] or [PSYC 1200 (017.120)(C)], or equivalent.

**EDUA 5770** Focus on Exceptionality: An Ecological Approach to FAS/E Cr.Hrs.3  
(Formerly 129.577) Students will be introduced to an ecological or multidisciplinary approach regarding children with FAS/E. Theoretical frameworks and evidence based assessment and instructional practices will be covered.

**EDUA 5800** Introduction to Educational Research Cr.Hrs.3  
(Formerly 129.580) A study of scientific inquiry in the field of education. Research and statistical methods are surveyed within the context of educational research. Particularly recommended for students interested in the evaluation and application of research findings. Not to be held with EDUA 5801 or the former 043.503.

**EDUA 5810** Theory of Test Construction Cr.Hrs.3  
(Formerly 129.581) Particular attention is given to problems of item analysis, validity, reliability, and test evaluation in the educational setting. Norm and criterion referenced tests are considered. Not to be held with EDUA 5811 or the former 043.504.

**EDUA 5930** Observing Child Behaviour Cr.Hrs.3  
(Formerly 129.593) The use of qualitative observation techniques, especially in educational settings, to understand children's behaviour, thinking, and motivations. Not to be held with EDUA 5930 or the former 043.530.

**EDUA 5940** Language and Symbolic Process Cr.Hrs.3  
(Formerly 129.594) The focus in this course is on the role of symbolic learning in the development of the young child. A study of theories on symbol formation is intended to serve as a framework for examining the emergence of representational capacities in movement, gesture, play, drawing and three dimensional media. Not to be held with the former 043.541. Prerequisite: former 043.307.



## Faculty of Engineering

**Dean:** Dr. Jonathan Beddoes, Ph.D., P.Eng.

**Associate Dean(s):** Nariman Sepehri, P.Eng. (Undergraduate); Dr. Douglas Thomson, Ph.D., P.Eng. (Research and Graduate Programs)

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**Website:** [umanitoba.ca/faculties/engineering](http://umanitoba.ca/faculties/engineering)

**Student Advising Office:** E1-284 EITC

**Telephone:** (204) 474-9807

### Academic Staff:

#### Biosystems Engineering:

For a complete listing of academic staff, please refer to the following website:

<http://umanitoba.ca/faculties/engineering/departments/biosystems/facstaff/acadstatic.html>

#### Civil Engineering

Academic Staff: Please refer to the Civil Engineering department website at:

<http://umanitoba.ca/faculties/engineering/departments/civil/staff/acadstatic.html>

#### Electrical and Computer Engineering

For a complete listing of academic staff, please refer to the following website:

<http://umanitoba.ca/faculties/engineering/departments/ece/staff/index.html>

#### Mechanical and Manufacturing Engineering:

For a complete listing of academic staff, please refer to the following website:

<http://umanitoba.ca/faculties/engineering/departments/mechanical/staff/index.html>

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## SECTION 1: Degrees Offered

Degree Offered	Years to Complete	Total Credit Hours
Bachelor of Science in Engineering (Biosystems)	*4	153
Bachelor of Science in Engineering (Civil)	*4	164
Bachelor of Science in Engineering (Computer)	*4	155-158
Bachelor of Science in Engineering (Electrical)	*4	159-163
Bachelor of Science in Engineering (Manufacturing)	*4	162-167
Bachelor of Science in Engineering (Mechanical)	*4	159
Post-Baccalaureate Diploma in Engineering	1-2	24

\*One year in Preliminary Program (36 credit hours) for direct admission students or in Preliminary Program courses (or equivalent) taken while in University I, plus three years in a departmental program.

The following is a summary of the admission requirements. Equivalent academic courses completed at recognized universities elsewhere will be considered. All admission requirements, as well as application deadline dates and forms, are included in an applicant information bulletin that is available from the [Admissions Office](#), Enrolment Services, 424 University Centre; this information is also posted on the university's website.

\*\*Please note: As of September 2009, the Department of Mechanical & Manufacturing Engineering is no longer accepting new Manufacturing Engineering students.\*\*

### 1.1 Available Majors,

Biosystems Engineering  
Civil Engineering  
Computer Engineering  
Electrical Engineering  
Manufacturing Engineering  
Mechanical Engineering

### 1.2 Available Minors, Arts

Computer Science  
Geological Sciences  
Management

Mathematics

Music

### 1.3 The Profession of Engineering,

Engineers use fundamental principles and energy sources from the natural world and direct them to the benefit of people. They interpret science in terms of material human needs and manage personnel, money, and materials. The profession is involved in all aspects of construction and manufacturing, including conceptualization, design, preparation of plans and specifications, and fabrication of products to meet predetermined standards of reliability and performance. Engineers acquire competence through instruction in basic sciences, mathematics, and engineering sciences; by introduction to the processes of synthesis and design; by complementary studies in the humanities, social sciences, and management; and by learning from the skills and experience of more senior engineers during the early years of employment.

The educational objective in the Faculty of Engineering is to prepare students for positions of leadership in a world where engineering, science, and management are of major importance.

## SECTION 2: Admission to the Faculty of Engineering

**Direct admission into the Faculty of Engineering from high school:**

Applicants who have completed Chemistry 40S, Mathematics 40S (pre-calculus), and Physics 40S with a minimum overall average of 85 per cent, and no grade lower than 60 per cent in any one course, may be admitted to Engineering directly from high school.

**From University 1 and/or other Faculties:**

A minimum of 8 of the 12 courses in the preliminary engineering program, section 4.2, each with a minimum grade of "C", and a minimum Adjusted Grade Point Average (AGPA) of 2.0. Acceptance to a department is competitive. Courses must be completed within ten years of the application date in order to be considered for transfer credit.

**Other requirements**

The university written English and mathematics requirements are satisfied by the English (ENGL 1310) and mathematics (MATH 1510, MATH 1710 and MATH 1210) courses in the preliminary engineering program.

**Chemical Engineering at the University of North Dakota**

The University of Manitoba has an agreement with the University of North Dakota, Grand Forks, N.D., which allows students to obtain a degree in chemical engineering from the University of North Dakota by taking the Preliminary Engineering program at the University of Manitoba and three years at the University of North Dakota. The chemical engineering program at the University of North Dakota is accredited by the Accreditation Board for Engineering and Technology in the United States and is recognized by the Association of Professional Engineers and Geoscientists of Manitoba. Information on this program may be obtained from the Student Advising Office, E1-284 EITC.

**SECTION 3: Academic Regulations**

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. In addition, the Faculty of Engineering has regulations and requirements, published below, which apply specifically to its students. Notwithstanding the regulations given in this section, the Faculty Council of Engineering reserves the right to rule on individual cases in exceptional circumstances.

**3.1 Appeals ,**

Students who feel that they have received unfair treatment in a course should appeal to the instructor. If the matter is not thereby resolved, it should be raised with the Department Head, or the Associate Dean (Undergraduate). Students wishing to appeal their academic status should write to the Associate Dean (Undergraduate), Committee on Standing and Appeals, E1-284 EITC before August 15<sup>th</sup>. Information regarding this process is available from the Student Advising Office, E1-284 EITC.

**3.2 Attendance ,**

When the number of unexcused absences recorded against a student in the Faculty of Engineering in any course exceeds 10 per cent of the number of lectures and laboratories for that course the instructor may report the case to the Dean of Engineering. When a student's

attendance or work continues to be unsatisfactory, the instructor has the authority to exclude the student from classes, or examinations, or both. Such cases shall be reported to the Faculty Council of Engineering at the first opportunity. Students who are excluded from an examination for inadequate attendance in a compulsory course are required to repeat the course.

**3.3 Categories of Students,**

A student shall normally register for three to six courses in a term. Registration for more than six or fewer than three courses in a term must be approved by the Department Head or, in the preliminary program, by the Associate Dean (Undergraduate).

*Full-Time Student:* Full-time students are those who are registered in at least 15 credit hours (considered 100 per cent) for the regular academic term of their specific programs. 80 per cent of a full course load is 12 credit hours; 60 per cent is 9 credit hours.

*Part-Time Student:* Part-time students are those who are registered for less than 15 credit hours for the regular academic term.

**3.4 Complementary Studies Electives,**

Complementary studies electives are an integral part of the curriculum. Their purpose is to broaden the student's experience beyond the purely scientific and technical content of engineering. They include studies in engineering economics and the impact of technology on society, as well as the central issues, methodologies and thought processes characteristic of the humanities and social sciences. Opportunities for development of the student's oral and written communication skills are also provided. The coursework requirements may vary from one department to another. XXX.09X0 courses will not be allowed as complementary studies electives ARTS 1110 Introduction to University may not be used for credit in the Faculty of Engineering.

**3.5 Course Selection,**

When arranging a program of study, a student must satisfy the following requirements:

- All prerequisite and corequisite course requirements must be met.
- All previously failed compulsory courses must be repeated. Students will require assistance with registration due to a block on the AURORA registration system which does not allow more than two repeats.
- Students are not normally allowed to repeat courses graded "C" or higher, except under special circumstances with the approval of the Department Head.
- Failed elective courses may be repeated or replaced with alternative elective courses.



**Prerequisite Course:** A prerequisite course must have been completed with a "C" grade or better before a subsequent course can be attempted. Under exceptional circumstances, a course instructor may waive, subject to approval by the Department Head (or designate), a prerequisite requirement.

**Corequisite Course:** A corequisite course must be taken concurrently or before its companion course. Under exceptional circumstances, a course instructor may waive, subject to approval by the Department Head (or designate), a corequisite requirement.

### 3.6 Examinations, Deferred Examinations

Deferred Examinations (See *Chapter, [General Academic Regulations and Requirements](#)* of this Calendar for details) are normally scheduled to take place within 30 working days from the end of the examination series from which the examination was deferred. The date of the deferred examination for a particular course will be set by the Dean's Office no later than January 15, May 15 or July 7, and in consultation with the instructor.

### Special Examinations

A student who has attempted to meet all requirements for the degree and has a single failure in their final session, in an engineering course, can apply for a special examination in that course. Special examinations may not be requested for any other reason. However, a special examination may be given on the recommendation of a Board of Examiners under exceptional circumstances. A special examination is given in addition to the regular examination. The grades from both examinations are retained on the student's record, and both are used in the calculation of TGPA and DGPA. The results of special examinations must be reported to the Faculty Council of Engineering. The special examination privileges apply only to courses offered by the Faculty of Engineering.

### Supplemental Examinations

The Faculty of Engineering does not provide supplemental examinations.

### Challenge for Credit

Courses offered in Engineering may not be challenged for credit.

### 3.7 Foreign Language Requirements for co-op and non-co-op Students,

There are some opportunities for undergraduate co-op and non-co-op students to work in foreign countries. However, there are foreign language requirements that must be fulfilled before placement can be considered. Students interested in foreign work assignments should acquaint themselves with these language requirements by consulting

with their department head as soon as possible after their entry into the Faculty of Engineering.

### 3.8 Grading and Assessment,

All grades awarded by instructors for undergraduate courses offered in the Faculty of Engineering are reviewed by examiners' boards, which comprise all of the instructors in the student's program year. After approval by department councils, they are presented to the Faculty Council of Engineering for acceptance. Following is a list of assessments which will occur at end of each of the terms (fall, winter, and summer):

#### Term Grade Point Average (TGPA)

The TGPA is computed from all of the final grades in all courses completed during a given academic term.

#### Degree Grade Point Average (DGPA)

The DGPA is computed from the final grades obtained in all courses attempted as part of a student's current degree program and courses transferred from other faculties and other institutions. Where a course has been repeated or replaced by an approved equivalent course only the last grade shall be included in the computation.

#### Cumulative Grade Point Average (CGPA)

The CGPA is computed from the final grades in all undergraduate courses attempted at the University of Manitoba and courses transferred from other faculties and other institutions.

#### Dean's Honour List

A continuing student who achieved a Term Grade Point Average (TGPA) of 3.50 or higher in their most recent academic assessment will be placed on the Dean's Honour List. The assessment is based on a minimum of 12 credit hours. A graduating student who achieved a Degree Grade Point Average (DGPA) of 3.50 or higher in their final academic evaluation will graduate on the Dean's Honour List.

#### Awards

A number of scholarships, bursaries and other academic awards are available to Engineering students. For information concerning awards (prizes, scholarships, and bursaries), please visit the Faculty website, [umanitoba.ca/faculties/engineering](http://umanitoba.ca/faculties/engineering)

### 3.9 Minors in Engineering, Arts Minor

A minor in Arts is available to Engineering students. The minor consists of 18 credit hours of Arts courses, including a



minimum of 6 credit hours in the Humanities and six credit hours in the Social Sciences; students must meet all pre-requisite requirements. Depending on the approval of the Engineering department, courses used for the minor may also be used to fulfil course requirements in Engineering.

### Computer Science Minor

A Minor in Computer Science is available to Engineering students. The minimum requirement is 18 credit hours of computer science courses subject to the following constraints: (1) Courses COMP 1010, COMP 1020, and COMP 2140 are compulsory; (2) 9 additional credit hours of COMP courses at the 2000 or 3000 level; and (3) registration in computer science courses will be controlled by normal pre-requisites and class size restrictions.

### Geological Sciences Minor

The minor includes the following set of courses:

1. GEOL 1340 Dynamic Earth or GEOL 2250 Geology for Engineers

2. One of the following three courses:

GEOL 1400 Time Trekker's Travelog: Our Evolving Earth

GEOL 1410 Natural Disasters and Global Change

GEOL 1420 Exploring the Planets

3. GEOL 2540 Introductory Mineralogy with Essential of Mineral Optics

4. Nine (9) credit hours of 2000-level or above courses in Geological Sciences

### Management Minor

The minor in Management offered by the Faculty of Management is available to Engineering students. The minor consists of any 18 credit hours of Management courses; students must meet all prerequisite requirements. Depending on the approval of the Engineering department, courses used for the minor may also be used to fulfill course requirements in Engineering. Admission requirements for the minor are based on all courses transferred to Engineering or completed while in Engineering; the requirements are a minimum of 30 credit hours with a minimum Degree Grade Point Average (DGPA) of 3.00. Up to 10 spaces are available each year for engineering students on a competitive basis. Applications can be made in the Engineering Dean's office up to May 30th.

### Mathematics Minor

A Minor in Mathematics is available to Engineering students. The minimum requirements are 24 credit hours of

mathematics courses subject to the following constraints: (1) the students must notify their home department that they are pursuing the minor; (2) up to 12 credit hours of mathematics courses in a student's engineering program may be counted toward the minor; (3) the student must complete at least 6 credit hours of courses from the mathematics department at the 3000 level or higher that are not included as part of the curriculum in the student's engineering program; and (4) approval of the Department of Mathematics is required for courses outside of the regular engineering program.

### Music Minor

#### Music Minor: (new minor beginning September 2007):

The music minor requirement is 18 credit hours of music courses subject to the following constraints: 1) courses MUSC 1110 (Music Theory 1) and MUSC 1120 (Music Theory 2) are compulsory; OR MUSC 1280 (Musical Style and Structure 1) and MUSC 1290 (Musical Style and Structure 2) ii) Students may take ensemble course but in order to earn credit toward the minor all three of the courses MUSC 2180 (Ensemble) or MUSC 1290, MUSC 3180 (Ensemble), and MUSC 4180 (Ensemble) must be completed. These three courses will count for 6 of the 18 required credit hours. iii) Any course offered by the Faculty of Music may be used for credit toward the minor. However, permission to register for any course must be granted by the Faculty of Music.

### 3.10 Professional Registration ,

In order to practice engineering in any province or territory in Canada, it is necessary to be a member of the professional engineering association of that province or territory. The requirements for membership are acceptable academic preparation and a subsequent period of acceptable engineering experience gained under the supervision of a registered professional engineer. The undergraduate programs in Biosystems, Civil, Computer, Electrical, Manufacturing, and Mechanical Engineering are accredited by the Canadian Engineering Accreditation Board (CEAB), reflecting acceptable academic preparation for membership in the association of professional engineers in any province or territory in Canada. Through a mutual recognition agreement, the programs are recognized as satisfying accreditation requirements in the United States, the United Kingdom, Ireland, New Zealand, Australia, and Hong Kong.

Graduates of an accredited program are eligible to apply for membership as an engineer-in-training, in the association of professional engineers in their province of residence in Canada. After a period of acceptable experience, they are eligible to apply to the association for registration as a professional engineer in that province.

### 3.11 Requirements for the Bachelor's Degree ,

The requirement for a Bachelor of Science degree in Engineering is a grade of "C" or better in all required and elective courses in the student's program. All other students are governed by the rules in effect at the time of their first registration in Engineering.



A student must complete at least 50 per cent of an engineering degree program as a full-time student in the Faculty of Engineering. Unless otherwise approved by the Dean of Engineering, students must complete all degree requirements within seven calendar years after being accepted into an Engineering department.

### Degree with Distinction

A student who on graduation achieves a Degree Grade Point Average (DGPA) of 3.80 or higher is awarded the degree "With Distinction."

### Criteria for Medal Awards

The Faculty of Engineering Program Gold Medal shall be awarded to the graduating student in each engineering program who has achieved the highest Degree Grade Point Average (DGPA) (minimum of 3.80) with no distinction as to full- or part-time status. The program Medal will be awarded at spring Convocation to the student who has completed that program in the past academic year (including October and February graduands).

The University Gold Medal for the Faculty of Engineering shall be awarded to the graduating student in the Faculty of Engineering who has achieved the highest Degree Grade Point Average (DPGA) (minimum of 3.80) for the entire program with no distinction as to full- or part-time status.

### 3.12 Student Progress and Academic Status,

Students shall be evaluated at the conclusion of each academic term in which they receive a final grade in a minimum of 6 credit hours of course material (excluding Special Student credit hours), with the assessment being based on the resulting Term Grade Point Average (TGPA) in those courses. This assessment shall be based on only those courses which form part of the student's Engineering Program. The academic assessments are as follows:

#### Good Academic Standing

A student with a TGPA of 2.00 or higher is in *Good Academic Standing*.

#### Academic Warning Letter

The first time the student's TGPA drops below 2.00, he/she will receive an *Academic Warning*. Students who receive such a warning are required to meet with an academic advisor from their department or, in the preliminary program, with the Associate Dean (undergraduate).

#### Academic Probation

The second time that a student's TGPA drops below 2.00, the student will be placed on *Academic Probation*.

#### Required to Withdraw

Undergraduate Calendar

The third time that a student's TGPA drops below 2.00, the student will be *Required to Withdraw*. Students who receive such a suspension shall be ineligible to take Engineering courses from the end of the term for which the suspension was issued through to the start of that same term in the subsequent academic year (normally, a period of 8 months.)

In order to be reinstated following the suspension period, the student must submit a written application for reinstatement to the Associate Dean (Undergraduate). Applications must be made by August 14, for reinstatement by September 1, or December 7 for reinstatement by January 1.

#### Ineligible to Proceed in Engineering

A student shall be *Ineligible to Proceed in Engineering* under either of the following conditions:

- a) The student's TGPA drops below 2.00 for a fourth time, or;
- b) The ratio of credit hours passed to credit hours attempted for that student drops below 75%, and the student has attempted a minimum of 72 credit hours.

#### Starting Afresh

Students who have become Ineligible to Proceed in Engineering may apply to the Dean for permission to start their degree afresh, should they wish to return to the Faculty of Engineering.

At the discretion of the Dean, a student may start afresh in an engineering program after a minimum period of two years from their last academic assessment by the Faculty of Engineering, and may request to transfer up to 40 credit hours in which a minimum grade of "C+" was achieved. All previous courses will remain on the student's academic transcript, but will not be applied to their new program.

### 3.13 Limit on Time in the Preliminary Engineering Program,

Students admitted to the Faculty of Engineering shall have two years to complete the minimum course requirements and submit a program declaration form for transit into an Engineering department. In the case of students admitted to the faculty through the Engineering Access Program the limit shall be three years.

Students who fail to meet this criterion shall be required to withdraw from Engineering. Such students may subsequently apply to be reinstated after successfully completing all courses forming the Preliminary Engineering Program.

### 3.14 Students Transiting to Departments,

Students will be accepted into department programs based on the following criteria. Direct entry or University 1 students who have completed 8-12 Preliminary program courses by



May 1st of each academic year will be ranked and admitted on a competitive basis based on the average of the best eight marks in courses in the Preliminary Engineering program.

Students transferring in from programs, faculties, or colleges will have all courses or equivalent courses that are required in a particular engineering program transferred in, including failed grades ("D's" and "F's") in those courses. In addition, students should be aware that the Faculty evaluates an individual's eligibility to proceed in an Engineering program based on credit hours passed versus credit hours attempted, as described in Section 3.12. Students are advised to consult with the Undergraduate Student Services Office (Engineering) if there is concern as to their standing under this rule.

Direct entry students must complete a program declaration form by May 1<sup>st</sup> in order to indicate their program of choice. Students from University 1 and other faculties must apply by May 1<sup>st</sup> through the Admissions Office.

### 3.15 Use of Calculating Devices ,

For courses offered by the Faculty of Engineering in which the use of devices capable of calculations is permitted in tests or examinations, such devices must be incapable of receiving and/or transmitting signals. Instructors wishing to restrict devices to certain capabilities must inform students, in writing, within the first week of term. Questions concerning the suitability of any given device should be directed to the course instructor(s).

### 3.16 Withdrawal from Courses,

The responsibility for initiating withdrawals rests solely with the student, and no voluntary withdrawals are permitted after the deadlines for voluntary withdrawal without academic penalty (see the chapter, [General Academic Regulations and Requirements](#), of this Calendar). For documented medical or compassionate reasons, Authorized Withdrawals may be permitted by the Dean.

A student who, after registering for courses, in any term, becomes ineligible to proceed in Engineering or receives an

Engineering Suspension will be withdrawn from his or her Intercession/Summer Session program.

## SECTION 4: Program Requirements

### 4.1 Engineering Access Program

**General Office:** E2-442 EITC  
**Telephone:** (204) 474 9872  
**Toll Free:** 1800 432 1960 ext. 9872  
**Fax:** (204) 474 7518  
**E-mail:** [geddest@cc.umanitoba.ca](mailto:geddest@cc.umanitoba.ca)  
**Web:** [www.engap.com](http://www.engap.com)

The Engineering Access Program (ENGAP) recognizes that students of Aboriginal ancestry may be challenged with geographic and economic barriers, and/or lack of access to academic preparation, which may make them unable to meet the faculty's admission requirements. ENGAP serves as a specifically designed post-secondary program that provides an opportunity for students to complete their Bachelor of Science degree in Engineering. The program accomplishes this objective by offering upgrading courses in mathematics, chemistry, and physics, as well as providing academic advice, personal and family counselling along with financial supports. Aboriginal students who do meet the regular requirements may still wish to join the program to benefit from these supports.

### 4.2 Preliminary Engineering Program

**Student Advising Office:** E1-284 EITC  
**Telephone:** (204) 474 9807  
**E-mail:** [eng\\_info@umanitoba.ca](mailto:eng_info@umanitoba.ca)  
**Website:** [umanitoba.ca/faculties/engineering](http://umanitoba.ca/faculties/engineering)

The Preliminary Engineering Program is common to all programs in engineering. Students in the preliminary engineering program or University 1 must complete at least 8 courses to be admitted to a degree granting engineering program. A student must complete the following list of 12 courses in order to graduate with a BSc degree from any of the engineering programs.

Course No.		Credit Hours
CHEM 1300	Structure and Modelling in Chemistry	3
COMP 1012	Computer Programming for Science & Engineers	3
ENG 1430	Design in Engineering	3
ENG 1440	Introduction to Statics	3
ENG 1450	Introduction to Electrical and Computer Engineering	3
ENG 1460	Introduction to Thermal Sciences	3
ENGL 1310	Literary Topics 1	3
MATH 1210	Techniques of Classical and Linear Algebra	3
MATH 1510	Applied Calculus 1 or equivalent (Note 1)	3
MATH 1710	Applied Calculus 2 or equivalent (Note 2)	3
PHIL 1290*	Critical Thinking 1	3
PHYS 1050	Physics 1: Mechanics	3



\*PHIL 1290 Critical Thinking is the recommended complementary studies elective. However, students may select any course from the Faculty of Arts or the Faculty of Management at the 1000 level or above, with the exception of ARTS 1110 Introduction to the University which may not be held for credit within the Faculty of Engineering.

**Note:**

- (1) MATH 1500 and MATH 1510 are regarded as equivalent to each other.
- (2) MATH 1700 and MATH 1710 are regarded as equivalent to each other.
- (3) MATH 1690 may be regarded as being equivalent to one course from (1) and one course from (2).
- (4) MATH 1300 is not an acceptable equivalent to MATH 1210

### University Written English and Mathematics Requirements

All students are required to complete the university written English and mathematics requirement within the first 60 credit hours of their program. This requirement is described in the chapter, [General Academic Regulations and Requirements](#), of this *Calendar*. In the Engineering programs the mathematics requirement is satisfied by one of MATH 1510 or MATH 1710 (or an equivalent), and the written English requirement by ENG 1310.

### 4.3 Common Courses Taught by the Faculty of Engineering-ENG 1000 Level

**ENG 1400** Engineering Design Cr.Hrs.3  
(Formerly 130.140) Part A: The Creative Process; The Design Process; Working in a Team. Part B: Drawing, Sketching and Computer-Aided Drawing (CAD); Descriptive Geometry; Design Studio; Graphics Tutorials. Prerequisites: A minimum grade of 60% in pre-calculus Mathematics 40S, or the former Mathematics 40S, Physics 40S, and Chemistry 40S, or permission of the Instructor.

**ENG 1430** Design in Engineering Cr.Hrs.3  
The Creative Process; The Design Process; Working in a Team. The Engineering Profession from the Perspective of Students and Professionals. Academic, Legal and Ethical considerations. Not to be held with the former 130.113 or 130.140. Prerequisite: A minimum grade of 60% in pre-calculus mathematics 40S, physics 40S, and chemistry 40S, or their equivalents.

**ENG 1440** Introduction to Statics Cr.Hrs.3  
Statics of Particles; Rigid Bodies, Equilibrium of Rigid Bodies; Analysis of Structures; Distributed Forces. Not to be held with the former 130.135. Prerequisites: A minimum grade of 60% in pre-calculus Mathematics 40S, or the former Mathematics 40S, Physics 40S, and Chemistry 40S.

**ENG 1450** Introduction to Electrical and Computer Engineering Cr.Hrs.3  
Part I: Current, voltage, energy, potential, power Ohm's law; independent sources; capacitor, inductor, ideal diode, op-amp; Kirchoff's law; simple circuits (Resistive, RC, RL, OP-Amp; Diode); introduction to ac theory (Sinusoidal waveform, phase relations of voltage and current waveforms for R,L,C, RL and RC circuits). Part II: Applications (Digital Logic, motors). Not to be held with the former 130.118. Prerequisites: A minimum grade of 60% in pre-calculus Mathematics 40S, or the former Mathematics 40S, Physics 40S, and Chemistry 40S.

**ENG 1460** Introduction to Thermal Sciences Cr.Hrs.3  
Properties of pure substances; First Law for Closed Systems; First Law for Open Systems; Second Law; Examples of Power Cycles and Refrigeration Cycles. Not to be held with the former 130.112. Prerequisites: A minimum grade of 60% in pre-calculus Mathematics 40S, or the former Mathematics 40S, Physics 40S, and Chemistry 40S.

**ENG 1900** Occupational Health and Safety Awareness Cr.Hrs.3  
Occupational health and safety will be discussed from the perspectives of various professions to understand 1) the issues relevant to individual professions and 2) how these individual perspectives may conflict. The overall goal for the course is to ensure that the student gains an appreciation for the importance of occupational health and safety to society.

### 4.3 Common Courses Taught by the Faculty of Engineering-ENG 2000 Level

**ENG 2010** Technical Communications Cr.Hrs.3  
(Formerly 130.201) Students work collaboratively in teams and develop strong project management skills. Focus is on the connection between engineering and communication design; the importance of audience analysis; a clear definition of the technical issues and the criteria by which to measure a design or solution; well-designed graphic aids which support the text; and clear writing and speaking. Prerequisite: ENGL 1310 (or equivalent), and ENG 1430

**ENG 2020** Engineering CAD Technology for Biosystems Cr.Hrs.2  
Instruction in the use of current CAD technology for conveying design through the use of graphics. Students will gain knowledge in technical drawing, 3D modelling techniques, production technology, and visual communication. Prerequisite: BIOE 2580.

### 4.4 Biosystems Engineering

**General Office:** E2-376 EITC

**Telephone:** 474 6033

**Fax:** 474 7512

**Website:**

[umanitoba.ca/faculties/engineering/departments/biosystems/](http://umanitoba.ca/faculties/engineering/departments/biosystems/)

**Head:** D.D. (Danny) Mann

**Associate Head:** N. (Nazim) Cicek

**Admin. Assistant:** Ms. D. (Debby) Watson

**Office Assistant:** Ms. E. (Evelyn) Fehr

For a complete listing of academic staff, please refer to the following website:

[umanitoba.ca/faculties/engineering/departments/biosystems/facstaff/acadstatic.html](http://umanitoba.ca/faculties/engineering/departments/biosystems/facstaff/acadstatic.html)



The Department of Biosystems Engineering offers an accredited degree program in Biosystems Engineering. Biosystems Engineering emphasizes the application of engineering principles to biologically-based systems (plants, animals, and microorganisms). The program is designed to give students knowledge of the fundamental principles of engineering and to introduce biological concepts to enable these engineers to successfully interact with relevant professionals when solving engineering problems involving biological systems. The program is offered in both a traditional and a co-operative education format. The department currently offers an Environmental Option, although no new students will be admitted to the Environmental Option effective September 2012 because the Environmental Option has been replaced with a Specialization. The department now offers five Specializations (Agricultural, Biomedical, Bioprocessing, Environmental, and Sustainable Building Systems) and one Minor (Agribusiness). With the appropriate selection of elective courses, the bachelor's degree in Biosystems

**Program Core Courses**

Note: Students are encouraged to consult the department for eight- and ten-term program models. Students are strongly encouraged to follow the model programs when possible, as timetabling and course offerings are based on these program models.

Course No.		Credit Hours
BIOE 2110	Transport Phenomenon	3
BIOE 2580	Biosystems Engineering Design Trilogy 1	4
BIOE 2590	Biology for Engineers	3
BIOE 3270	Instrumentation and Measurement for Biosystems	4
BIOE 3320	Engineering Properties of Biological Materials	4
BIOE 3580	Biosystems Engineering Design Trilogy 2	4
BIOE 3590	Mechanics of Materials in Biosystems	4
BIOE 4240	Graduation Project	3
BIOE 4530	Analysis and Design of Biomachinery	4
BIOE 4580	Biosystems Engineering Design Trilogy 3	4
CHEM 1310	University Chemistry 1	3
CIVL 2790	Fluid Mechanics	4
or		
MECH 2262	Fundamentals of Fluid Mechanics	4
CIVL 2800	Solid Mechanics 1	4
or		
MECH 2222	Mechanics of Materials	4
CIVL 3710	Finite Element Analysis	4
CIVL 4050	Engineering Economics	3
ENG 2020	Engineering CAD Technologies for Biosystems	2
MATH 2120	Introduction to Numerical Methods for Engineers	4
MATH 2130	Engineering Mathematical Analysis 1	3
MATH 2132	Engineering Mathematical Analysis 2	3
MBIO 1220	Essentials of Microbiology	3
or		
MBIO 1010	Microbiology 1	3
MECH 3482	Kinematics and Dynamics	4
STAT 2220	Contemporary Statistics for Engineers	3

Engineering meets the requirements for admission to the Faculty of Medicine.

The undergraduate curriculum in Biosystems Engineering is an academic program in the Faculty of Engineering. Students wishing to study in the program in Biosystems Engineering must be admitted to the Faculty of Engineering. They are required to complete the Preliminary Engineering Program as a prerequisite to the courses in Biosystems Engineering.

**4.4 Biosystems Engineering Degree Program  
Biosystems Engineering Degree Program**

Preliminary Engineering Program  
Common to all engineering programs (see [Section 5.2](#) for details).



BIOL 1410	Anatomy of the Human Body	3
or		
SOIL 4060	Physical Properties of Soil	3
BIOL 1412	Physiology of the Human Body	3
or		
AGRI 2200	Principles of Plant and Animal Physiology	4
One course in Technology and Society (CIVL 4600, ANTH 2430 or ANTH 2500)		3
Two Complementary Studies Electives		6
Four Biosystems Engineering Design Electives (see list below)		16
Two Free Electives		6-8
Total credit hours for graduation		150 to 153

#### 4.4 Biosystems Engineering Design Electives

Course No.		Credit Hours
BIOE 4390	Unit Operations 1	4
BIOE 4412	Design of Light-Frame Building Systems	4
BIOE 4414	Imaging and Spectroscopy for Biosystems	4
BIOE 4420	Crop Preservation	4
BIOE 4440	Bioprocessing for Biorefining	4
BIOE 4460	Air Pollution Assessment and Management	4
BIOE 4480	Environmental Impact Assessment	4
BIOE 4560	Structural Design in Wood	4
BIOE 4590	Management of By-Products from Animal Production	4
BIOE 4600	Design of Water Management Systems	4
BIOE 4610	Design of Assistive Technology Devices	4
BIOE 4620	Remediation Engineering	4
BIOE 4630	Pollution Prevention Practices	4
BIOE 4640	Bioengineering Applications in Medicine	4
BIOE 4700	Alternative Building Design	4

#### 4.4 Complementary Studies Electives

Complementary studies electives are required to give the engineering student exposure to topics outside the fields of science and engineering. There are many university courses that fulfill this requirement. Any course at the 1000-level or above from the faculties of Arts or Management, or the Department of Agribusiness and Agricultural Economics can be used as a complementary studies elective. However, ARTS 1100 Introduction to University may not be used for credit in the Faculty of Engineering. Other university courses which do not cover topics of science or engineering may also be acceptable. Please consult with the department head (or his/her designate) for approval of such courses.

#### Free Electives

Any university course at the 1000-level or above can be used as a free elective. However, ARTS 1100 Introduction to University may not be used for credit in the Faculty of Engineering.

#### Environmental Option

The departments of Biosystems Engineering and Civil Engineering offer an Environmental Option which provides an opportunity for students to focus on environmental engineering related courses. Successful completion of the Environmental Option will be indicated on graduates' transcripts. Students selecting the Environmental Option within the Biosystems Engineering department will have the



knowledge to solve problems associated with the natural environment (groundwater con-tamination, soil degradation, pollution of rivers and lakes, air pollution, en-vironmental impact assessment) as well as the built environment (building air quality, temperature and humidity control). Biosystems Engineering stu-dents will gain a thorough

understanding of the fundamental concepts and interactions between biology, engineering science and engineering design to prepare them well for a career in environmental engineering. No new students will be admitted to the Environmental Option effective September 2012.

Course No.		Credit Hours
BIOE 2110	Transport Phenomenon	3
BIOE 2580	Biosystems Engineering Design Trilogy 1	4
BIOE 2590	Biology for Engineers	3
BIOE 3270	Instrumentation and Measurement for Biosystems	4
BIOE 3320	Engineering Properties of Biological Materials	4
BIOE 3580	Biosystems Engineering Design Trilogy 2	4
BIOE 3590	Mechanics of Materials in Biosystems	4
BIOE 4240	Graduation Project	3
BIOE 4530	Analysis and Design of Biomachinery	4
BIOE 4580	Biosystems Engineering Design Trilogy 3	4
CHEM 1310	University Chemistry 1	3
CIVL 2790	Fluid Mechanics	4
or		
MECH 2262	Fundamentals of Fluid Mechanics	4
CIVL 2800	Solid Mechanics 1	4
or		
MECH 2222	Mechanics of Materials	4
CIVL 3710	Finite Element Analysis	4
CIVL 4050	Engineering Economics	3
ENG 2020	Engineering CAD Technologies for Biosystems	2
MATH 2120	Introduction to Numerical Methods for Engineers	4
MATH 2130	Engineering Mathematical Analysis 1	3
MATH 2132	Engineering Mathematical Analysis 2	3
MBIO 1220	Essentials of Microbiology	3
or		
MBIO 1010	Microbiology 1	3
MECH 3482	Kinematics and Dynamics	4
STAT 2220	Contemporary Statistics for Engineers	3
SOIL 4060	Physical Properties of Soil	3
or		
BIOL 1410	Anatomy of the Human Body	3
AGRI 2200	Principles of Plant and Animal Physiology	4
or		
BIOL 1412	Physiology of the Human Body	3
PHIL 2750	Environmental Ethics	3
BIOE 4480	Environmental Impact Assessment	4
or		
CIVL 4100	Engineering Management and the Environment	4
CIVL 3690	Environmental Engineering Analysis	4
CIVL 3700	Environmental Engineering Design	4
	One course in Technology and Society (CIVL 4600, ANTH 2430 or ANTH 2500)	3
	One Complementary Studies Elective	3



Three Biosystems Engineering Design Electives (see list above)	12
Total credit hours for graduation	153

BIOE 2090 Machinery for Agricultural Production

**4.4 Agricultural Specialization**

Students who obtain a grade of “C” or better in the courses listed below will receive a notation of “agricultural specialization” on their transcript at the time of graduation.

BIOE 2222 Precision Agriculture Concepts and Applications

ENTM 3170 Crop Protection Entomology

**Group A: Science Electives**

PLNT 2500 Crop Production

Within the two science slots in the core program, choose:

PLNT 2510 Fundamentals of Horticulture

SOIL 4060 Physical Properties of Soil

SOIL 3520 Pesticides: Environment, Economics and Ethics

AGRI 2200 Principles of Plant and Animal Physiology

**Biomedical Specialization**

Students who obtain a grade of “C” or better in the courses listed below will receive a notation of “biomedical specialization” on their transcript at the time of graduation.

**Group B: Biosystems Engineering Design Electives**

**Group A: Science Electives**

Choose at least three of the following courses from the list of available design electives:

Within the two science elective slots in the core program, choose:

BIOE 4412 Design of Light-Frame Building Systems

BIOL 1410 Human Anatomy (rather than SOIL 4060) BIOL 1412 Physiology of the Human Body (rather than AGRI 2200)

BIOE 4420 Crop Preservation

**Group B: Biosystems Engineering Design Electives**

BIOE 4590 Management of By-Products from Animal Production

Choose the following three courses from the list of available design electives: BIOE 4414 Imaging and Spectroscopy for Biosystems BIOE 4610 Design of Assistive Technology Devices BIOE 4640 Bioengineering Applications in Medicine

BIOE 4600 Design of Water Management Systems

**Group C: Complementary Studies & Free Electives**

**Group C: Complementary Studies & Free Electives**

Choose 9 credit hours (minimum of 3 credit hours of complementary studies marked by\*) from the following list of courses:

**Choose** 9 credit hours (minimum of 3 credit hours of complementary studies marked by \*) from the following list of courses: BIOL 2410 Human Physiology 1 BIOL 2420 Human Physiology 2 BIOL 4470 Sensory-Motor Physiology

ABIZ 1000 Introduction to Agribusiness Management\*

ECE 4610 Biomedical Instrumentation and Signal Processing ENG 1900 Occupational Health and Safety Awareness\* HIST 4660 History of Health and Disease (6)\* HIST 4680 History of Health and Disease in Modern Canada (6)\* KIN 2330 Biomechanics KIN 4330 Advanced Biomechanics NATV 3240 Native Medicine and Health\* PHIL 2740 Ethics and Biomedicine\*

ABIZ 3530 Farm Management\*

AGRI 1500 Natural Resources and Primary Agricultural Production

**Bioprocessing Specialization**

Students who obtain a grade of “C” or better in the courses listed below will receive a notation of “bioprocessing specialization” on their transcript at the time of graduation.

AGRI 1510 Production, Distribution and Utilization of Agricultural Products

**Group A: Science Electives**

Within the two science slots in the core program, choose: SOIL 4060 Physical Properties of Soil AGRI 2200 Principles of Plant and Animal Physiology



**Group B: Biosystems Engineering Design Electives**

Choose at least three courses from the list of available design electives: BIOE 4420 Crop Preservation BIOE 4390 Unit Operations 1 BIOE 4440 Bioprocessing for Biorefining BIOE 4590 Management of By-Products from Animal Production BIOE 4630 Pollution Prevention Practices

**Group C: Complementary Studies & Free Electives**

Choose 9 credit hours (minimum of 3 credit hours of complementary studies marked by\*) from the following list of courses: ABIZ 1010 Economics of World Food Issues and Policies\* ENG 1900 Occupational Health and Safety Awareness\*

FOOD 1000 Food Safety Today and Tomorrow FOOD 3010 Food Process 1 FOOD 4260 Water Management in Food Processing HNSC 1200 Food: Facts and Fallacies HNSC 2160 Principles of Food Preparation and Preservation

**Environmental Specialization**

Students who obtain a grade of "C" or better in the courses listed below will receive a notation of "environmental specialization" on their transcript at the time of graduation.

**Group A: Science Electives**

Within the two science slots in the core program, choose:

SOIL 4060 Physical Properties of Soil

AGRI 2200 Principles of Plant and Animal Physiology

-

**Group B: Biosystems Engineering Design Electives**

Choose at least three of the following courses from the list of available design electives:

BIOE 4460 Air Pollution Assessment and Management

BIOE 4480 Environmental Impact Assessment

BIOE 4590 Management of By-Products from Animal Production

BIOE 4600 Design of Water Management Systems

BIOE 4620 Remediation Engineering

BIOE 4630 Pollution Prevention Practices

**Group C: Complementary Studies & Free Electives**

Choose 9 credit hours (minimum of 3 credit hours of complementary studies marked by \*) from the following list of courses:

ABIZ 2390 Introduction to Environmental Economics\* (or equivalent)

AGEC 2370 Principles of Ecology (or equivalent)

CIVL 3690 Environmental Engineering Analysis

CIVL 3700 Environmental Engineering Design

CIVL 4350 Hazardous Waste Treatment

GEOG 2250 Introduction to Geographic Information Systems

GEOG 2520 Geography of Natural Resources\*

PHIL 2750 Environmental Ethics\*

**Sustainable Building Systems Specialization**

Students who obtain a grade of "C" or better in the courses listed below will receive a notation of "sustainable building systems specialization" on their transcript at the time of graduation.

**Group A: Science Electives**

Within the two science slots in the core program, choose:

SOIL 4060 Physical Properties of Soil

AGRI 2200 Principles of Plant and Animal Physiology OR BIOL 1412 Physiology of the Human Body

**Group B: Biosystems Engineering Design Electives**

Choose the following three courses from the list of available design electives:

BIOE 4412 Design of Light-Frame Building Systems

BIOE 4560 Structural Design in Wood

BIOE 4700 Alternative Building Design

**Group C: Complementary Studies & Free Electives**

Choose 9 credit hours (minimum of 3 credit hours of complementary studies marked by \*) from the following list of courses:

CIVL 2770 Civil Engineering Materials



CIVL 3760 Structural Analysis

ENVR 3750 Green Building and Planning

EVDS 1600 Introduction to Environmental Design\*

EVDS 1660 History of Culture, Ideas and Environment\*

#### Agribusiness Minor

A minor in agribusiness is available to Biosystems Engineering students. The minimum requirement is 18 credit hours consisting of ECON 1010 Introduction to Microeconomic Principles (3 credit hours), ECON 1020 Introduction to Macroeconomic Principles (3 credit hours), ABIZ 1000 Introduction to Agribusiness (3 credit hours), ABIZ 2510 Introduction to Agricultural and Food Marketing (3 credit hours), ABIZ 2520 Introduction to Management Sciences (3 credit hours) and at least three additional credit hours from the Department of Agribusiness and Agricultural Economics (students must meet all prerequisite requirements). A maximum of 2 courses (6 credit hours) of courses used for the minor may also be used to fulfill course requirements in Biosystems Engineering.

#### Admission to Medicine

The bachelor's degree in Biosystems Engineering provides the background to meet eligibility requirements for admission into the Faculty of Medicine. Students planning to apply for entrance to Medicine after completing the B.Sc. in Biosystems Engineering are advised to take PHIL 2740 Ethics and Biomedicine as one complementary studies elective, CHEM 2210 Organic Chemistry 1 and CHEM 2360 Biochemistry 1 as their two free electives.

#### Co-operative Education Program in Biosystems Engineering

**Coordinator:** N. (Nazim) Cicek

Co-operative education is a process of learning which formally integrates the student's academic study with work experience in industry, government, and the profession. The work terms provide you with practical experience, help finance your education, and provide guidance for further career specialization. At the time of your first placement, you will have completed 80 credit hours of your program and be in a position to make a contribution in the workplace. You must be in good academic standing to enter the co-operative education program.

Students typically start their first co-op work term in May after completion of the winter term of their second year. The work term is 4 months, but can be extended to 8 months. In this case, students would replace one academic term with a work term. Students generally enter their next co-op work term in May of the following year. September and January starting times may be possible if students are willing to postpone an academic term.

Acceptance into the program is dependent upon the student receiving a job placement in consultation with the department's cooperative education coordinator. Once a job placement has been secured through the coordinator, the student is accepted into the program and enrolls in course BIOE 2000 Cooperative Work Study 1, BIOE 3000 Cooperative Work Study 2, or BIOE 4000 Cooperative Work Study 3 as appropriate. To pass these courses, students must prepare a work term report. The cooperative education coordinator assigns faculty advisors to mark work term reports; reports are given grades of "Pass" or "Fail." In order to remain in the co-operative education program, a student must maintain a minimum DGPA of 2.00 and must obtain a grade of "pass" for each work term report. All rules and regulations of the Faculty of Engineering apply. Students who do not maintain these standards may not remain in the co-operative education program. Each successfully completed cooperative education course carries one credit hour. A graduate who successfully completes BIOE 2000, BIOE 3000, and BIOE 4000 will have the words "Co-operative Education" appear on their transcript.

#### 4.5 Biosystems Engineering -2000 Level

**BIOE 2000** Coop Work Study 1 Cr.Hrs.1

Work assignments in business, industry or government for cooperative education students in Biosystems Engineering. Requires submission of a written report covering the work completed during the four-month work period.

**BIOE 2090** Machinery for Agricultural Production Cr.Hrs.4 (Formerly 034.209) Farm machinery selection. Machine performance. Ownership and operating costs. Analysis of machine functions for safety and efficiency.

**BIOE 2110** Transport Phenomena Cr.Hrs.3 (Formerly 034.211) Principles of heat transfer, solar radiation, psychometrics, molecular diffusion, mass transfer and refrigeration and their application to biosystems. Prerequisite: ENG 1460 (or 130.112).

**BIOE 2222** Precision Agriculture Concepts and Applications Cr.Hrs.4  
Precision agriculture is a philosophy of agricultural management that has been enabled by modern technology. This course examines the technology and the techniques of precision agriculture including GPS, GIS, variable rate technologies, and yield monitoring that can be used to improve the efficiency of agricultural operations by decreasing costs, increasing profits, and decreasing hazards to the environment.

**BIOE 2580** Biosystems Engineering Design Trilogy 1 Cr.Hrs.4 (Formerly 034.258) Biosystems Engineering and its place in the professions of engineering and agronomy. Design concepts, with an emphasis on team building and technical communication skills. Philosophy of project planning. Preparation of a conceptual design by teams in response to design assignment submitted by industry. Written report presented orally. Prerequisite: ENG 1430 OR THE FORMER ENG 1400 (OR 130.140).

**BIOE 2590** Biology for Engineers Cr.Hrs.3 (Formerly 034.259) Provide theories and principles of



Biology to engineering students and present applications of biological principles to engineering problems. Fundamental theories involved in cell structure and function, metabolism, genetics and heredity, bacteria and virus structure and function, plant and animal structure and function are covered. An introduction to animal and plant physiology is also provided. Laboratory sessions and term assignments focus on the engineering applications of these basic theories and principles to provide a good understanding of the role of Biology in Engineering. Prerequisite: CHEM 1300 (or 002.130).

#### 4.5 Biosystems Engineering -3000 Level

**BIOE 3000** Cooperative Work Study 2 Cr.Hrs.1

Work assignment in business, industry, or government for cooperative education students in Biosystems Engineering. Requires submission of a written report covering the work completed during the four-month work period. Not to be held with the former BIOE 3550 or 034.355. Prerequisite: BIOE 2000.

**BIOE 3200** Environmental Engineering for Non-Engineers Cr.Hrs.3

This course will discuss air pollution and odor control, remediation of contaminated soil and ground water, wastewater and solid waste treatment, and the role of biotechnology in these processes. Consent of Instructor required.

**BIOE 3270** Instrumentation and Measurement for Biosystems Cr.Hrs.4

(Formerly 034.327) Basic instrumentation for measuring electrical and non-electrical quantities associated with biosystems engineering and industry; transducers for automatic control. Prerequisites: [MATH 2132 (or the former MATH 2110 (or 136.211))] and [ENG 1450 or the former ENG 1180 (130.118)].

**BIOE 3320** Engineering Properties of Biological Materials Cr.Hrs.4

Engineering properties of biological and interacting materials within the system. Relationship between composition, structure, and properties of plant, animal, and human tissues. Definition and measurement of mechanical, thermal, electromagnetic, chemical and biological properties and their variability. Use of these properties in engineering calculations. Prerequisites: Math 2130 ( or Math 2100 or 136.210), CIVL 2800 (or 23.280) or MECH 2222 (or Mech 2220 or 025.222) BIOE 2580 (or 034.258). Not to be held with the former 034.323.

**BIOE 3530** Engineering Fundamentals Cr.Hrs.3

(Formerly 034.353) Principles of heat transfer, steam, psychometrics, fluid mechanics, material balances, electricity and refrigeration. Cannot be held for credit in the Faculty of Engineering. Not to be held with the former 034.329. Prerequisite: [MATH 1300 or equivalent] and [MATH 1500 or equivalent] or the former MATH 1680 (136.168).

**BIOE 3580** Biosystems Engineering Design Trilogy 2 Cr.Hrs.4

(Formerly 034.358) Advanced design concepts associated with Biosystems Engineering, with emphasis on the principles of safety and human factors engineering. Theory of project planning. Preparation of a preliminary design by

design teams in response to a design assignment submitted by industry. Written report with engineering drawings presented orally. Prerequisites: BIOE 2580 (or 034.258 or 034.214). Not to be held with the former 034.326.

**BIOE 3590** Mechanics of Materials in Biosystems Cr.Hrs.4 (Formerly 034.359) In this course students will be exposed to both the theory and physical behaviour of materials when subjected to loads. The course will be delivered using a combination of lectures and hands-on labs. The materials presented include a wide range of design biosystems engineers may be involved with, including plastics, bone, wood, concrete, steel, other biological materials and composites. Prerequisite: CIVL 2800 (or 023.280), or consent of instructor. Not to be held with the former 034.324

#### 4.5 Biosystems Engineering -4000 Level

**BIOE 4000** Coop Work Study 3 Cr.Hrs.1

Work assignments in business, industry or government for cooperative education students in Biosystems Engineering. Requires submission of a written report covering work completed during the four-month work period. Not to be held with the former BIOE 4550 ( or 034.455). Prerequisite: BIOE 3000.

**BIOE 4240** Graduation Project Cr.Hrs.3

Either an independent or a directed study including at least one of: a comprehensive literature review, an experimental research project, or an engineering design problem. The project is to be concluded by a formal report or thesis. Prerequisites: BIOE 3270 (034.327) or approval of department.

**BIOE 4390** Unit Operations 1 Cr.Hrs.4

Equipment and systems used in handling, mixing, size reduction, separation and size enlargement of value-added food products. Prerequisites: CIVL 2790 (or 023.279) or MECH 2262 (or 025.226). Corequisites: BIOE 3320 (or 034.332 or 034.323), BIOE 3270 (or 034.327).

**BIOE 4412** Design of Light-Frame Building Systems Cr.Hrs.4

Light-frame buildings as a structural and environmental system; structural loads in building systems; energy (heat), moisture and air contaminants in building systems; built-environment for building occupants. Hands-on labs of constructing small-scale structures for students to gain an understanding of building construction techniques. Prerequisites: BIOE 2110 ( 034.211) and BIOE 3590 (034.359).

**BIOE 4414** Imaging and Spectroscopy for Biosystems Cr.Hrs.4

The purpose of this course is to familiarize senior Biosystems Engineering students with the fundamentals of imaging and spectroscopy for biosystems. Techniques of image acquisition, storage, processing, and pattern recognition will be taught. Various spectroscopy techniques and their applicability to biological materials will be discussed. Analysis of data using statistical, artificial neural networks and chemometric methods will be covered. Offered in alternate years. Prerequisite: BIOE 3270 (034.327)

**BIOE 4416** Topics in Biosystems Engineering Cr.Hrs.3

This course will cover contemporary topics in Biosystems



Engineering. The specific topics and a detailed outline will be available at the time of registration. Prerequisite: Permission of the department.

**BIOE 4420** Crop Preservation Cr.Hrs.4  
(Formerly 034.442) Biological and physical deterioration during storage. Methods of preserving and storing cereals, oilseeds, and other agricultural crops. Prerequisite: BIOE 2110 (or 034.211).

**BIOE 4440** Bioprocessing for Biorefining Cr.Hrs.4  
This course will provide students with an understanding of the principles involved in the design of proper conditions for processing of biomaterials for production of high-quality biofuels and bioproducts. The content of this course is built on the principles of physics, transport phenomena, thermodynamics, reaction, kinetics, fermentation, and industrial unit operations. Prerequisite: BIOE 2110 (or 034.211). Pre- or corequisite: BIOE 3320 (or 034.332 or 034.323)

**BIOE 4460** Air Pollution Assessment and Management Cr.Hrs.4  
Air pollutant sources and characteristics, their impact on the environment, their behaviour in the atmosphere. Methods of sampling and measurement and the basic technological alternatives available for separation/removal and control. Particular problems of regional interest are discussed. Corequisites: CIVL 2790 (or 023.279) or MECH 2262 (or MECH 2260 or 025.226).

**BIOE 4480** Environmental Impact Assessment Cr.Hrs.4  
(Formerly 034.448) Basic methodologies for conducting impact assessments, including physical, chemical and ecological impacts. Prerequisites: approval of department. Not offered in 2005-2006.

**BIOE 4500** Water Management Cr.Hrs.3  
(Formerly 034.450) Introduction to the design of irrigation and drainage systems. Topics in irrigation include sprinklers, laterals, mainline and pumps. Drainage topics cover both the surface and subsurface systems. Analysis of precipitation and runoff. Environmental impacts of water management. Offered alternate years.

**BIOE 4520** Crop Preservation and Handling Cr.Hrs.3  
(Formerly 034.452) Interaction of biological and physical factors related to methods of preserving, storing, and handling cereals, oilseeds, and other agricultural crops. Offered alternate years.

**BIOE 4530** Analysis and Design of Biomachinery Cr.Hrs.4  
Design of machines for bioprocessing; traction mechanics and tractor chassis mechanics; power transmission components; functional requirements for field and process machines; fluid power hydraulics. Prerequisite: BIOE 2580 (or 034.258).

**BIOE 4560** Structural Design in Wood Cr.Hrs.4  
(Formerly 034.456) Design using wood as a structural material in light-frame buildings. Consideration of design constraints associated with sawn lumber as well as based composite materials. Emphasis on use of computer based design aids. Prerequisites: CIVL 3770 (or 023.377) or BIOE 3590 (034.359) or 034.324.

**BIOE 4580** Biosystems Engineering Design Trilogy 3 Cr.Hrs.4  
(Formerly 034.458) Advanced design concepts, with emphasis on the principle of quality control. Application of project planning techniques. Principles of owning and operating an engineering consulting company. Preparation of a final design by design teams in response to a design assignment submitted by industry. Written report with cost of services rendered, presented orally. Prerequisite: BIOE 3580 (or 034.358) or 034.326. Not to be held with the former 034.413.

**BIOE 4590** Management of By-Products from Animal Production Cr.Hrs.4  
Topics covered include solid and liquid manure, manure characteristics, manure collection, storage, land application and utilization, biological treatment, design of equipment and facilities for manure handling. Environment issues, such as odour and water pollution associated with manure management will also be discussed. Prerequisites: CIVL 2790 (or 023.279) or MECH 2262 (or MECH 2260 or 025.226).

**BIOE 4600** Design of Water Management Systems Cr.Hrs.4  
(Formerly 034.460) To introduce the basic theoretical principles in the design of irrigation and drainage systems. Topics covered include the determination of irrigation depth and interval, evapotranspiration, measurement and analysis of precipitation, design of sprinkler and drip irrigation systems, selection of pumps, surface and subsurface drainage design, water quality issues, salinity management, and the environmental impact of water management practices. Corequisite: SOIL 4060 (or 040.406) or CIVL 3730 (or 023.373) or consent of instructor.

**BIOE 4610** Design of Assistive Technology Devices Cr.Hrs.4  
(Formerly 034.461) Application and design of technology for individuals with disabilities; emphasizing the development of the requisite knowledge, skills, and attitudes to evaluate, design, and implement client-centred assistive technology. A multi-disciplinary approach to learning and applying knowledge will be emphasized with engineering and medical rehabilitation students collaborating on a design project. Prerequisite: BIOL 1412 (or ZOOL 1330 or 022.133).

**BIOE 4620** Remediation Engineering Cr.Hrs.4  
The theoretical basis for the engineering design of different remediation technologies to treat contaminated soil and groundwater will be introduced. Methods for site characterization, monitoring of progress in remediation, and modeling of the remediation process will be presented. Different methods such as soil washing, air sparging, bioremediation, phytoremediation, constructed wetlands, electrokinetic remediation, reactive barriers will be discussed. Prerequisite: CIVL 2790 (or 023.279) or MECH 2262 (or MECH 2260 or 025.226).

**BIOE 4630** Pollution Prevention Practices Cr.Hrs.4  
To give students an understanding of pollution prevention as it relates to solids and hazardous waste management, air and water pollution, energy usage, and resource depletion. To evaluate practices on improved manufacturing operations, present fundamentals of pollution prevention economics, examine waste minimization incentives, design improvements to existing systems, and investigate overall sustainability of industrial practices. Prerequisite: CIVL 2790



(or 023.279) or MECH 2262 (or MECH 2260 or 025.226).

**BIOE 4640** Bioengineering Applications in Medicine Cr.Hrs.4

This course surveys bioengineering applications and medicine from a clinical engineering perspective. Topics include: clinical engineering practice; device development legislation; biomedical sensors; biosensors; biomaterials and biocompatibility; as well as the principles of and design for medical imaging equipment. Prerequisites: BIOL 1410 (or ZOOL 1320 or 022.132) and BIOL 1412 (or ZOOL 1330 or 022.133) and BIOE 3320 (0343.332).

**BIOE 4700** Alternative Building Design Cr.Hrs.4

This course will provide students with experience in the design of structures that utilize natural and green building materials and techniques. Students will get hands-on lab experience with various natural building materials such as straw, straw light clay, cob and stackwall. Prerequisites: BIOE 3590 (or 034.359) or CIVL 3770 (or 023.377).

## 4.6 Civil Engineering

The Department of Civil Engineering offers a fully accredited degree program in Civil Engineering. Graduates of the Civil Engineering program are academically qualified to register as Engineers-in-Training in engineering licensing bodies in Canada. The Civil Engineering program is designed to give students a broad knowledge of engineering principles and professional practice. The program has a strong core component that provides exposure to a range of areas in Civil Engineering, including – but not limited to – the design of building and bridges, the design of facilities and methods for treatment of water, waste water and solid waste, the design of foundations and earthworks such as dams and river bank protection, transportation planning, the design of roads and pavement, the design of hydraulic structures such as sewers, canals, and spillways, and the management of surface and ground water. In the last years of the program, there are some opportunities for specialization through selection of technical elective courses. A cooperative education option allows students to include practical work experience in their program.

**Civil Engineering Degree Program**

Students are to consult with the department for four and five-year program plans. Students are expected to follow the program plans when possible, as timetabling and course offerings are based on these plans.

**Environmental Engineering Option**

An option in Environmental Engineering provides an opportunity for students to focus on environmental engineering related courses.

**Student Support**

Summer employment for a limited number of undergraduate students may be offered by the Department of Civil Engineering. Typical duties include assisting academic staff members with their research projects. **Laboratory Safety** Students entering Civil Engineering are required to attend a seminar on laboratory safety. The seminar will normally be held in September.

**Preliminary Engineering Program**

Common to all Engineering programs. (See Section 4.2 for details.)

Civil Engineering Program and Environmental Engineering Option

**Common Core Program**

Course No. Credit Hours

STAT 2220 Introduction to Probability and Statistics 3

GEOL 2250 Geology for Engineers 4

CHEM 2560 Water Quality Analysis 3

CIVL 2770 Civil Engineering Materials 5

CIVL 2780 Civil Engineering Systems 4

CIVL 2790 Fluid Mechanics 4

CIVL 2800 Solid Mechanics 1 4

CIVL 2830 Graphics for Civil Engineers 2

CIVL 2840 Civil Engineering Geomatics 3

CIVL 3590 Numerical Methods for Engineers 4

CIVL 3690 Environmental Engineering Analysis 4

CIVL 3700 Environmental Engineering Design 4

CIVL 3710 Finite Element Analysis 4

CIVL 3730 Geotechnical Materials and Analysis 4

CIVL 3740 Hydraulics 4

CIVL 3750 Hydrology 4

CIVL 3760 Structural Analysis 4

CIVL 3770 Structural Design 1 4

CIVL 3790 Transportation Engineering 1 4

CIVL 4050 Engineering Economics 3

CIVL 4220 Geotechnical Design 4

CIVL 4250 Groundwater Hydrology 4



CIVL 4380 Infrastructure Engineering and Construction Management 4

CIVL 4390 Structural Design 2 4

CIVL 4400 Transportation Engineering 2 4

CIVL 4460 Technology, Society and the Future 3

CIVL 4590 Design Project 6

ENG 2010 Technical Communications 3

MATH 2130 Engineering Mathematical Analysis 1 3

MATH 2132 Engineering Mathematical Analysis 2 3

Civil Engineering:

xxxx xxxx Complementary Studies Elective (see Note 1) 3

**Environmental Option:**

PHIL 2750 Environmental Ethics 3

**Civil Engineering Technical Electives: (3)**

CIVL 4020 Masonry Design and Construction 4

CIVL 4030 Structural Design 3 4

CIVL 4040 Structural Dynamics 4

CIVL 4100 Engineering Management and the Environment 4

Or

BIOE 4480 Environmental Impact Assessment 4

CIVL 4180 Environmental Systems 4

CIVL 4200 Groundwater Contamination 4

CIVL 4230 Geotechnical Engineering 4

CIVL 4330 Graduation Project 4

CIVL 4350 Hazardous Waste Treatment 4

CIVL 4410 Transportation Systems 4

CIVL 4420 Highway Pavement Design 4

CIVL 4470 Watershed Processes 4

BIOE 4412 Design of Light Frame Bldg. 4

BIOE 4560 Structural Design in Wood 4

**Environmental Option Technical Electives: (3)**

CIVL 4100 Engineering Management and the Environment 4

Or

BIOE 4480 Environmental Impact Assessment 4

SOIL 4090 Chemical Analysis of Soils 3

SOIL 4500 Remediation of Contaminated Land 3

CIVL 4180 Environmental Systems 4

CIVL 4200 Groundwater Contamination 4

CIVL 4330 Graduation Project 4

CIVL 4350 Hazardous Waste Treatment 4

CIVL 4470 Watershed Processes 4

BIOE 4460 Air Pollution Assessment and Management 4

1) Students are required to take any course from the Faculty of Arts or Faculty of Management,

at the 1000 level or above, as a complementary studies elective. However,

ARTS 1110 Introduction to University may not be used for credit in the Faculty of Engineering.

2) Students may take one technical elective course with a significant engineering science and/or design component from another department, subject to the approval by the head (or designate) of Civil Engineering

**Co-operative Education Option in Civil Engineering**

The Department of Civil Engineering offers a co-operative education option that provides a combination of education and experience by alternating academic terms with work terms. Students generally apply for the co-op program in their fourth term of engineering studies. Entry into the program is competitive. Acceptance is based on GPA and general aptitude, and is contingent upon receiving a work term placement through the co-op office. The Department of Civil Engineering reserves the right to determine and select the best-qualified applicants.



Students who are unable to maintain the standards of the co-op program will be transferred back into the regular program.

The course and grade requirements for completion of the Co-operative Education Option are the same as those required for the regular program. However, in order to satisfy course prerequisite requirements, timetables may differ from the regular program. Co-op students are evaluated in the same manner as regular students and all rules and regulations of the Faculty of Engineering apply.

Written reports must be completed at the end of each work term. Each successfully completed work term and its corresponding work term report receives a Pass/Fail grade. Co-op graduates with a passing grade in at least three work terms will have the Co-operative Education Option acknowledged on their B.Sc. (C.E.) graduation parchment.

#### 4.7 Civil Engineering -2000 Level

**CIVL 2770** Civil Engineering Materials Cr.Hrs.5 (Formerly 023.277) Principles of testing; testing standards; instrumentation; data acquisition systems; mechanical properties of steel, iron, cement, concrete, asphalt, wood and composites; classification and particle size analysis of soils and aggregates. Prerequisite ENG 1440 (or 130.144). Corequisite: CIVL 2800 (or 023.280).

**CIVL 2780** Civil Engineering Systems Cr.Hrs.4 (Formerly 023.278) Introduction to applied systems analysis approach. Use of applied systems analysis in Civil Engineering. Optimization techniques: linear programming; dynamic programming; other techniques. Evaluation: decision analysis. Prerequisite: (MATH 1710 (or 136.171) or MATH 1700 (or 136.170)) (C)

**CIVL 2790** Fluid Mechanics Cr.Hrs.4 (Formerly 023.279) Definition of fluid; fluid properties; variation of pressure in a fluid; hydrostatic forces; buoyancy; kinematics of flow; control volumes; continuity; Bernoulli's equation; momentum equation; energy equation; flow in closed conduits; open channel flow. Prerequisite: ENG 1440 (or 130.144).

**CIVL 2800** Solid Mechanics 1 Cr.Hrs.4 (Formerly 023.280) Analysis of deformable bodies; stress and strain in three dimensions; equilibrium equations and strain-displacement relations; constitutive relations and mechanical behaviour of materials; radially symmetric and plane problems in elasticity; relevant experimental demonstrations. Prerequisite: ENG 1440 (or 130.144).

**CIVL 2830** Graphics for Civil Engineers Cr.Hrs.2 Orthographic Drawing: Object Orientation and Views, Space Dimensions, Surfaces, Lines, and Hidden Features. Computer-based Drawings. Applications: Steel and Reinforced Concrete Structures, Digital Terrain Models. Ethical, Legal and Professional Issues. Not to be held with the former 130.140. Co-requisite: CIVL 2840 Civil Engineering Geomatics.

**CIVL 2840** Civil Engineering Geomatics Cr.Hrs.3 Geomatics in civil engineering, map-making, map-reading, computerized maps; leveling; distance measurement angles, directions, traverses; coordinate geometry; electronic survey instruments; global positioning system; geographic information systems; digital photogrammetric methods and

data; aspects of route surveying. Not to be held with the former 023.281 or 023.282 or CIVL 2820. Pre or Co-requisite: MATH 1210 (C), Co-requisite: CIVL 2830 Graphics for Civil Engineers.

**CIVL 2900** Co-op Work Term 1 Cr.Hrs.0

Work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail Grade) May not be held with CIVL 3560.

#### 4.7 Civil Engineering -3000 Level

**CIVL 3590** Numerical Methods in Engineering Analysis Cr.Hrs.4 (Formerly 023.359) Variety of numerical techniques applicable to solutions of problems in civil engineering. Students may not hold credit for CIVL 3590 (023.359) and MATH 2120 (or 136.212). Prerequisite: COMP 1010 (or 074.101) (C). Pre or Co-requisite: MATH 2132, MATH 2100 (or 136.210)

**CIVL 3690** Environmental Engineering Analysis Cr.Hrs.4 (Formerly 023.369) Introduction to environmental engineering analysis concept; risk assessment; colloidal dispersions; mass balances, reaction kinetics and reactor design principles. Water pollution and water quality in rivers and lakes. Physical, chemical and biological unit operations and processes applied in water and/or wastewater treatment. Meteorology and air pollution; atmospheric dispersion. Solid waste management issues. Prerequisites: (CHEM 2560 (C) or CIVL 2760 (or 023.276) (C)), STAT 2220 (or 005.222) (C)

**CIVL 3700** Environmental Engineering Design Cr.Hrs.4 (Formerly 023.370) Design principles are developed for water, solid/soil and air pollution control. Application of the principles in design projects which may include surface and groundwater remediation, solid waste management, landfilling, soil remediation and site assessment; municipal and industrial wastewater treatment; odour and air pollution abatement facilities. Prerequisite: CIVL 3690 (or 023.369).

**CIVL 3710** Finite Element Analysis Cr.Hrs.4 (Formerly 023.371) One-dimensional analysis of fluid flow, seepage and heat transfer; truss, beam and frame elements; two-dimensional problems; isoparametric elements and Gauss quadrature; time-dependent problems, diffusion, consolidation, and time integration methods; introduction to commercial packages; solution of problems in civil engineering (seepage, dams, pavements). Prerequisites: CIVL 2790 (or 023.279) (C), CIVL 2800 (or 023.280) (C), CIVL 3590 (or 23.359) (C)

**CIVL 3730** Geotechnical Materials and Analysis Cr.Hrs.4 (Formerly 023.373) Geotechnical Materials and Analysis (3-1.5T:0-0) 4 Soil and rock properties: laboratory and field techniques; in situ states of stress and consolidations; constitutive models; stress beneath loaded areas and around tunnels; analysis of simple retaining structures and slopes; stability and settlement of shallow and deep foundations in soil and rock. Prerequisites: GEOL 2250 (or 007.225), CIVL 2770 (23.277), CIVL 2800 (or 023.280).

**CIVL 3740** Hydraulics Cr.Hrs.4

(Formerly 023.374) Hydraulics of uniform and gradually varied flow; backwater computation and classification of surface water profiles; hydraulics jumps, spillways, and stilling basins; flow over weirs; hydraulic models; theory of turbo-machinery. Prerequisite: CIVL 2790 (or 023.279).

**CIVL 3750** Hydrology Cr.Hrs.4

(Formerly 023.375) Basic hydrological processes; precipitation; evapotranspiration; infiltration and runoff; analytical methods; hydrograph theory and application; application to reservoir design; project floods and flow forecasting; statistical analysis. Prerequisite or corequisite: STAT 2220 (or 005.222).

**CIVL 3760** Structural Analysis Cr.Hrs.4

(Formerly 023.376) Different structural forms and load distribution, analysis of cables; statically determinate curved, beams and frames; influence lines; energy methods and deflections of structures; flexibility and stiffness methods; computer-aided structural analysis; introduction to structural dynamics. Prerequisite: CIVL 2800 (or 023.280).

**CIVL 3770** Structural Design 1 Cr.Hrs.4

(Formerly 023.377) Introduction to design of steel structures; loading, structural configurations; design of simple members and connections; building code requirements. Prerequisites: CIVL 2770 (or 023.277) (C), CIVL 3760 (or 23.376) (C).

**CIVL 3790** Transportation Engineering 1 Cr.Hrs.4

(Formerly 023.379) Introduction to transportation. Overview of Canada and U.S. transport systems. Fundamentals of transport systems analysis. Introduction to sequential demand modeling. Analysis and evaluation of uninterrupted flow on highways. Basics of geometric design of highways. Basics of design of at-grade intersections. Introduction to computer applications in transportation engineering. Basics of pavement engineering and design. Prerequisites: CIVL 2820 (or 023.282) or CIVL 2840, CIVL 2770 (or 023.277), CIVL 2780 (or 023.278), STAT 2220 (or 005.222).

**CIVL 3910** Co-Op Work Term 2 Cr.Hrs.0

Work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment. Prerequisite: CIVIL 2900. (Pass/Fail Grade). May not be held with CIVL 3570.

**4.7 Civil Engineering -4000 Level****CIVL 4020** Masonry Design and Construction Cr.Hrs.4

Introduction to the building codes that govern masonry design. Advanced design procedures for masonry members and structures. Single-story and multi-story building design. Prerequisite: CIVL 3760.

**CIVL 4030** Structural Design 3 Cr.Hrs.4

(Formerly 023.403) Prestressed concrete structures; fibre-reinforced concrete structures; bridge loading, analysis and design in steel and concrete; special topics in structural engineering. Corequisite: CIVL 2770 (or 23.277), CIVL 2800 (or 23.280), CIVL 3760 (or 23.376), CIVL 3770 (23.377), CIVL 4390 (or 023.439).

**CIVL 4040** Structural Dynamics Cr.Hrs.4

(Formerly 023.404) Dynamic loads in civil engineering;

overview of structural dynamics; single-degree-of-freedom systems; free-vibration, harmonic, periodic and impulsive loads; multi-degree-of-freedom systems; distributed systems; beam vibrations; steady-state vibrations of foundations; introduction to earthquake engineering; elastic waves in soils, response and design spectrums; wind vibrations. Prerequisite: CIVL 3760 (or 023.376).

**CIVL 4050** Engineering Economics Cr.Hrs.3

(Formerly 023.405) Introduction to engineering economics. Time value of money and discounted cash flow calculations. Comparing alternatives. Replacement analysis and life-cycle costing. Public sector engineering economy studies. Private sector engineering economy studies. Before and after-tax analysis. Applications in cost-estimating. Applications in asset management systems. Basic accounting. Accommodating capital limitations. Dealing with inflation. Dealing with risk and uncertainty. Prerequisite: STAT 2220 (or 005.222).

**CIVL 4100** Engineering Management and the Environment Cr.Hrs.4

(Formerly 023.410) Teams of students apply environmental management techniques, such as: impact assessment, site assessment, and auditing to selected engineering construction projects and operations; several oral and written reports are required. Corequisite: CIVL 3700 (or 023.370).

**CIVL 4180** Environmental Systems Cr.Hrs.4

(Formerly 023.418) Development of a river water quality model; waste allocation modelling; modelling of the sites selection process; analysis of environmental impact using technical and non-technical (i.e. sociological, ethical, aesthetic) parameters. Prerequisites: CIVL 2780 (or 023.278), CIVL 3690 (or 023.369), CIVL 3750 (or 023.375).

**CIVL 4200** Groundwater Contamination Cr.Hrs.4

(Formerly 023.420) Introduction to the principles of groundwater chemistry; chemical evolution of natural groundwater flow systems; sources of contamination; mass transport processes; hydrochemical behaviour of contaminants; nuclear waste disposal; non-aqueous phase organics; aquifer remediation. Prerequisites: CIVL 4250 (or 023.425), GEOL 2250 (or 007.225).

**CIVL 4220** Geotechnical Design Cr.Hrs.4

(Formerly 023.422) Site characterization; design and construction of surface footings, deep foundations, tunnels, earth and rock support systems; design and remediation of slopes; frozen soils and foundation design; geosynthetics and geofabrics in geotechnical construction; reinforced earth; geoenvironmental issues; tailing dams, clean-up, and remediation. Prerequisite: CIVL 3730 (or 023.373).

**CIVL 4230** Geotechnical Engineering Cr.Hrs.4

(Formerly 023.423) Case-history approach to geotechnical engineering practice from civil and mining engineering; relationship between predicted and observed behaviour; surface and shallow footings; propped walls and bulkheads; rock and soft ground tunneling; deep foundations; rock and soil slopes; culverts; geoenvironmental problems. Prerequisite: CIVL 3730 (or 023.373).

**CIVL 4250** Groundwater Hydrology Cr.Hrs.4

(Formerly 023.425) Introduction to theory of groundwater flow; flow nets; regional groundwater flow; well hydraulics; role of groundwater in geologic and engineering processes;



multiphase flow. Prerequisites: GEOL 2250 (or 007.225), CIVL 2790 (or 23.279), MATH 2130 (or MATH 2110), MATH 2132 (or MATH 2100).

**CIVL 4330** Graduation Project Cr.Hrs.4 (Formerly 023.433) The student will undertake an original study involving engineering design, procedure, or experimental investigation that emphasizes the student's initiative and judgement. The student must demonstrate an ability to plan, conduct and formally report on the study by written thesis and oral presentation. Pre-requisite: Completion of 120 credit hours, ENG 2010 (or 130.201).

**CIVL 4350** Hazardous Waste Treatment Cr.Hrs.4 (Formerly 023.435) Sources and classification of hazardous and industrial wastes. Overview of the waste management problem. Theory and applications of various physical, chemical, and thermal, waste treatment processes. Waste elimination options and strategies. Prerequisite: CIVL 3690 (or 023.369).

**CIVL 4380** Infrastructure Engineering and Construction Management Cr.Hrs.4 (Formerly 023.438) Infrastructure engineering; drainage systems, maintenance engineering and management. Construction and project management; workplace health and safety, construction site field trips, construction equipment, temporary facilities, project management. Elements of law for civil engineers. Prerequisites: CIVL 4050 (or 023.405).

**CIVL 4390** Structural Design 2 Cr.Hrs.4 (Formerly 023.439) Design in reinforced concrete; properties of materials; ultimate strength design; analysis and design of sections in bending; shear and development considerations; short- and long-term deflection; sections subjected to bending and axial stresses; design of simple floor systems; column footings. Prerequisite: CIVL 2770 (or 023.277), CIVL 2800 (or 023.280), CIVL 3760 (or 023.376), CIVL 3770 (or 023.377).

**CIVL 4400** Transportation Engineering 2 Cr.Hrs.4 (Formerly 023.440) Fundamentals of traffic control for highways. Capacity and level of service analysis on urban streets. Urban supplement to geometric design guide for Canadian roads. Modelling vehicle performance. Elements of railway engineering. Design for trucks. Transportation systems management. Application of intelligent transportation systems. Basic pavement design methods. Introduction to pavement management systems. Highway accidents and design for safety. Legislative and policy framework for transportation engineering. Prerequisite: CIVL 3790 (or 023.379).

**CIVL 4410** Transportation Systems Cr.Hrs.4 (Formerly 023.441) Contemporary approaches to transportation planning. Data for transportation planning. Advanced demand analysis and modelling. Illustrative transport planning studies. Planning and design for public passenger transportation. Planning and design for barrier-free transportation and transport of disabled persons. Goods movement and trucking studies. Planning and design for motor carrier operations. Planning and design for grain handling and transportation. Transport planning in developing countries. Evaluating transport plans and projects. Transport and the environment. Transport and energy. Vehicle operating costs and engineering unit cost

models. Prerequisite: CIVL 3790 (or 023.379).

**CIVL 4420** Highway Pavement Design Cr.Hrs.4 (Formerly 023.442) Soil classification and properties; soil-moisture-density-strength relationships; earthwork operations and specifications; soil stabilization; granular bases; surface drainage; structural design of flexible and rigid pavements. Prerequisites: CIVL 2770 (or 023.277), CIVL 3790 (or 023.379).

**CIVL 4460** Technology, Society, and the Future Cr.Hrs.3 (Formerly 023.446) Impact of technology and technological change on society - past, present, future; specific technologies, e.g. construction, machine power, computers, communications, medical, military; the process of technological change; invisible effects of technology; technology and resource use; sustainable development, limits to growth and the role of technology. Prerequisite: ENGL 1310 (or 004.131) or ENGL 1320 (or 004.132).

**CIVL 4470** Watershed Processes Cr.Hrs.4 (Formerly 023.447) Rainfall-runoff processes, flood routing; characteristics and mechanics of flow in (natural) channels; computer modelling of watershed hydrology and hydraulics; influence of man-made structures; river morphology, sediment transport prediction, design of a stable channel; river ice processes. Prerequisites: CIVL 3750 (or 023.375), (or 023.375), Pre or co-requisite: CIVL 3740 (or 23.374).

**CIVL 4590** Design Project Cr.Hrs.6 (Formerly 023.459) An interdisciplinary project-based course involving engineering design, teamwork and delivered in studio format. Students are expected to work in pre-assigned teams under the guidance of professional engineers on a pre-determined project. Lecture material will cover project management, construction, environmental and economic issues. Each team will be required to give an oral presentation of their design project. Prerequisite: CIVL 3770 (or 023.377), CIVL 3700 (or 023.370) and ENG 2010 (or 130.201).

**CIVL 4900** Engineering Cooperative Education Assignment 3 Cr.Hrs.1 (Formerly 023.490) See CIVL 3560 (or 023.356) for course description.

**CIVL 4910** Engineering Cooperative Education Assignment 4 Cr.Hrs.1 (Formerly 023.491) See CIVL 3560 (or 023.356) for course description.

**CIVL 4920** Co-op Work Term 3 Cr.Hrs.0 Work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment. Prerequisite: CIVL 3910 (Pass/Fail Grade). May not be held with CIVL 4900.

**CIVL 4930** Co-op Work Term 4 Cr.Hrs.0 Work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment. Prerequisite: CIVL 4920 (Pass/Fail grade). May not be held with CIVL 4910.

**CIVL 4940** Co-op Work Term 5 Cr.Hrs.0 Work assignment in business, industry, or government for



cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment. Prerequisite: CIVL 4930 (Pass/Fail Grade). May not be held with CIVL 4210.

#### 4.8 Electrical and Computer Engineering

**General Office:** E2-390 EITC

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**Website:** [www.ece.umanitoba.ca](http://www.ece.umanitoba.ca)

**Head:** Dr. U. Annakkage, P.Eng.

**Associate Head (Computer Engineering):** Dr. W. Kinsner, P.Eng.

**Associate Head (Electrical Engineering):** Dr. C. Shafai, P.Eng.

The Department of Electrical and Computer Engineering offers two fully accredited degree programs, one in Electrical Engineering and one in Computer Engineering. Both programs may include an industry internship. The programs are designed to give students knowledge of the basic principles of engineering and, in particular, an adequate training and education in the fundamentals and professional applications of Electrical and Computer Engineering. It is recommended that students entering Electrical or Computer Engineering acquire their own computer.

#### Industry Internship Program (IIP)

**Director:** Dr. R. McLeod, P.Eng.

**Coordinator:** Elenor Friesen

The Department of Electrical and Computer Engineering offers an Industry Internship Program. This program is designed to complement and enrich the academic program with practical work experience. Preceding the final year, a student in either the Electrical Engineering or the Computer Engineering program has the option of spending a continuous work term period of 12 to 16 months in industry. This work term provides the student with practical experience, helps to finance the student's education, and provides guidance for further career specialization.

A student in good academic standing, who will have completed 120 credit hours of the academic program by the end of the session, may apply to participate in the Industry Internship Program. Acceptance in ECE 4720 Industry Internship is dependent upon the student receiving job placement.

Satisfactory work reports, which will be evaluated by faculty members in the Department of Electrical and Computer Engineering, are required upon returning in order to have this participation recorded in the student's transcript.

#### Preliminary Engineering Program

Common to all Engineering programs. (See Section 4.2 for details.)

#### Electrical Engineering Departmental Program

#### Second Degree in Electrical or Computer Engineering

Requirements include:

1. The completion of all deficient third and lower year courses required for the second degree. If a student has already taken any of these courses as fourth year electives towards the first degree, then they will not have to repeat or replace the courses already taken.

2. The equivalent of a full fourth year program required for the second degree, i.e., twelve half courses. This must include:

i) A second thesis on a different topic relating to the field of the second degree

ii) All the fourth year course requirements of the second degree. If a student has already taken one or more of the required fourth year courses during their first degree, then they must replace these courses by other appropriate fourth year courses as approved by the Department Head. For example, core courses common to both programs must be replaced by fourth year electives from the Department.

#### Electrical Engineering Degree Program

The program in Electrical Engineering has a core-plus-elective structure. The core develops the necessary base in mathematics, the physical sciences, dynamics, thermodynamics, electric fields and circuits, and fundamental professional courses focused on energy conversion and transmission, electronics, materials and devices, communications, and control systems. The final year includes a capstone group design project, control systems, and communication systems as core requirements, with the remaining program based on electives. A certain level of specialization is possible through the selection of elective courses offered in the final year.

The student's program must include a three credit hour complementary studies elective. Courses in engineering economics, technical writing, and ecology, technology and society are compulsory.

Students are encouraged to consult with the department for model four- and five-year programs. Students are strongly encouraged to follow the model programs when possible, as timetabling and course offerings are based on these.



Course No.	Credit Hours
ANTH 2430 Ecology, Technology and Society	3
CIVL 4050 Engineering Economics	3
ECE 2160 Electronics 2E	5
ECE 2220 Digital Logic Systems	5
ECE 2240 Numerical Methods for Electrical Engineers	4
ECE 2262 Electric Circuits	4
ECE 3540 Advanced Circuit Analysis and Design	4
ECE 3580 Foundations of Electromagnetics	4
ECE 3590 Electromagnetic Theory	4
ECE 3600 Physical Electronics	4
ECE 3610 Microprocessing Systems	4
ECE 3670 Electronics 3E	4
ECE 3720 Electric Power and Machines	4
ECE 3730 Principles of Embedded System Design (See Note 8)	4
ECE 3780 Signal Processing 1	4
ECE 4150 Control Systems	4
ECE 4260 Communications Systems	4
ECE 4600 Group Design Project (see Note 1)	6
ENG 2010 Technical Communications	3
MATH 2130 Engineering Mathematical Analysis 1	3
MATH 2132 Engineering Mathematical Analysis 2	3
MATH 3132 Engineering Mathematical Analysis 3	3
PHYS 2152 Modern Physics for Engineers	3
STAT 2220 Contemporary Statistics for Engineers	3
Complementary Studies Elective (1 required) (see Note 2)	3
Science Elective (1 required) (see Note 6)	



Technical Electives (7 required) (see Notes 3, 4)

Total credits for Graduation 159-163

**Technical Electives (7 required) (see Notes 3, 4)**

**Group A**

ECE 3650 Electric Machines	5
ECE 4100 Microelectronic Fabrication	4
ECE 4140 Power Transmission Lines	4
ECE 4160 Control Engineering	4
ECE 4200 Electric Filter Design	4
ECE 4250 Digital Communications	4
ECE 4270 Antennas	4
ECE 4280 Engineering Electromagnetics	4
ECE 4290 Microwave Engineering	4
ECE 4300 Electrical Energy Systems 1	4
ECE 4310 Electrical Energy Systems 2	4
ECE 4370 Power Electronics	4
ECE 4390 Engineering Computations 4E	4
ECE 4420 Digital Control	4
ECE 4580 Optoelectronics	4
ECE 4610 Biomedical Instrumentation And Signal Processing	4
ECE 4830 Signal Processing 2	4
ECE 4850 Contemporary Topics in Electrical and Computer Engineering 1 (see Note 7)	4
ECE 4860 Contemporary Topics in Electrical and Computer Engineering 2 (see Note 7)	4
ECE 4870 Contemporary Topics in Electrical and Computer	



Engineering 3 (see Note 7) 3

ECE 4880 Contemporary Topics in Electrical and Computer

Engineering 4 (see Note 7) 3

**Group B**

ECE 3700 Telecom Networking 4

ECE 3760 Digital Systems Design 1 4

ECE 3770 Digital Systems Design 2 4

ECE 4240 Microprocessor Interfacing 4

ECE 4440 Computer Vision 4

ECE 4530 Parallel Processing 4

ECE 4540 Wireless Networks 4

ECE 4740 Digital Systems Implementation 4

COMP 2140 Data Structures and Algorithms 3

MATH 3120 Applied Discrete Mathematics 3

MATH 3700 Applied Complex Analysis 3

MATH 3810 Partial Differential Equations 3

**NOTES:**

1. Course continuing through both terms; credit given on completion of course.

2. The complementary studies elective can be any course at the 1000 level or above from either the faculties of Arts or Management. However, ARTS 1110 (formerly 099.111) Introduction to University may not be used for credit in the Faculty of Engineering.

3. A minimum of 4 electives are required from Group A; the other 3 electives may be taken from either Group A or B.

4. The Department of Electrical and Computer Engineering does not guarantee that all elective courses will be offered every session or that it will be possible to fit courses into all of the many possible timetable combinations of students taking the programs. The term in which an elective course is offered is specified each year in the online timetables on the Department website. There may be a maximum limit set on the number of students allowed to take a particular elective in a session. Similarly, there may be a minimum limit and if registration is below the minimum, the elective will be cancelled and those registered will be required to transfer to another elective before the deadline date for course changes.

5. Students are urged to discuss their program of courses with members of the instructional staff toward the end of their third year to obtain advice concerning the best choice of electives for their needs.

6. The science elective course is to be chosen from a list of courses approved by the department.



7. Requires permission of the Department.

8. Students who do not complete ECE 3730 are required to have taken both ECE 3710 and ECE 4240.

### Focus Areas in Electrical Engineering

Students wishing to pursue more focused studies in an Electrical Engineering subject/research area have the choice of doing so through a Focus Area. Courses taken towards an Area take the place of some or all of the 7 Technical Electives required in Electrical Engineering. See <http://www.ece.umanitoba.ca/undergraduate> for a detailed description of each area and the courses required.

#### Power and Energy Systems (5 courses)

ECE 3650 Electric Machines

4 PES Technical Electives (3 from Group 1; 1 from Group 1 or 2)

#### Wireless Communication Devices (5 courses)

5 WCD Technical Electives (3 from Group 1; 2 from Group 1 or 2)

#### Engineering Physics\*\* (7 courses; 1 counts as Science Elective)

ECE 4580 Optoelectronics

PHYS 2380 Quantum Physics 1

PHYS 2650 Classical Mechanics 1

PHYS 3670 Classical Thermodynamics

PHYS 3680 Statistical Mechanics

2 Eng Physics Technical Electives (1 from Group 1; 1 from Group 1 or 2)

#### Biomedical\*\* (6 courses; 1 counts as Science Elective)

ECE 4610 Biomedical Instrumentation and Signal Processing

BIOL 1410 Anatomy of the Human Body

BIOL 1412 Physiology of the Human Body OR MBIO 1220 Essentials of Microbiology

BIOE 2590 Biology for Engineers OR BIOL 1030 Biology 2: Biological Diversity, Function and Interactions

2 Biomed Technical Electives (1 from Group 1; 1 from Group 1 or 2)



*\*\*The Physics and Biomedical Focus Areas require students to complete 1 extra course in addition to the 45 courses needed to fulfill regular program requirements. Talk to the Department for more details.*

### Admissions to Medicine

The Biomedical Focus Area provides the background to meet eligibility requirements for admission into the Faculty of Medicine when specific Biomedical Technical Electives are completed. Please see the website for details.

#### (Computer)

#### Preliminary Engineering Program

Common to all Engineering Programs. (See Section 4.2 for details.)

#### Computer Engineering Departmental Program

Course No.	Credit Hours
ANTH 2430 Ecology, Technology and Society	3
CIVL 4050 Engineering Economics	3
COMP 1020 Computer Science 2	3
COMP 2140 Data Structures and Algorithms	3
COMP 3430 Introduction to Operating Systems	3
ECE 2160 Electronics 2E	5
ECE 2220 Digital Logic Systems	5
ECE 2262 Electric Circuits	4
ECE 3540 Advanced Circuits	4
ECE 3610 Microprocessing Systems	4
ECE 3670 Electronics 3E	4
ECE 3700 Telecommunication Network Engineering	4
ECE 3740 System Engineering Principles 1	4
ECE 3760 Digital Systems Design 1	4
ECE 3780 Signal Processing 1	4
ECE 3790 Engineering Algorithms	4
ECE 4150 Control Systems	4

Or



ECE 4260 Communication Systems	4
ECE 4240 Microprocessor Interfacing	4
ECE 4740 Digital Systems Implementation	4
ECE 4830 Signal Processing 2	4
ECE 4600 Group Design Project (See Note 1)	6
ENG 2010 Technical Communications	3
MATH 2130 Engineering Mathematical Analysis 1	3
MATH 2132 Engineering Mathematical Analysis 2	3
MATH 3120 Applied Discrete Mathematics	3
MATH 3132 Engineering Mathematical Analysis 3	3
PHYS 2152 Modern Physics for Engineers	3
STAT 2220 Contemporary Statistics for Engineers	3
Complementary Studies Elective (1 required) (see Note 2)	3
Science Elective (1 required) (see Note 5)	
Technical Electives (3 required) (see Note 3)	
Total credits for Graduation	155-158

**Technical Electives (3 required) (see Note 3)**

**Computer Engineering Electives (1 required)**

ECE 3750 Systems Engineering Principles 2	4
ECE 3770 Digital Systems Design 2	4
ECE 4250 Digital Communications	4
ECE 4420 Digital Control	4
ECE 4440 Computer Vision	4
ECE 4520 Simulation and Modeling	4
ECE 4530 Parallel Processing	4
ECE 4740 Digital System Implementation	4



ECE 4850 Contemporary Topics in Electrical and Computer Engineering 1 (see Note 6)	4
ECE 4860 Contemporary Topics in Electrical and Computer Engineering 2 (see Note 6)	4
ECE 4870 Contemporary Topics in Electrical and Computer Engineering 3 (see Note 6)	3
ECE 4880 Contemporary Topics in Electrical and Computer Engineering 4 (see Note 6)	3
<b>Computer Science Electives (1 required)</b>	
COMP 2150 Object Orientation	3
COMP 2160 Programming Practices	3
COMP 3010 Distributed Computing	3
COMP 3020 Human-Computer Interaction	3
COMP 3190 Introduction to Artificial Intelligence	3
COMP 3290 Introduction to Compiler Construction	3
COMP 3380 Databases Concepts and Usage	3
COMP 3490 Computer Graphics 1	3
COMP 3710 User Interfaces	3
COMP 4300 Computer Networks	3
COMP 4360 Machine Learning	3
COMP 4490 Computer Graphics 2	3
<b>Electrical Engineering Electives (1 required)</b>	
ECE 3600 Physical Electronics	4
ECE 3720 Electric Power and Machines	4
ECE 4150 Control Systems	4
ECE 4260 Communication Systems	4



ECE 4610 Biomedical Instrumentation and Signal Processing 4

**NOTES:**

1. Course continuing through both terms. Credit on completion of course.
2. The complementary studies elective can be any course at the 1000 level or above from either the faculties of Arts or Management. However, ARTS 1110 (formerly 099.111), Introduction to University, may not be used for credit in the Faculty of Engineering.
3. The Department of Electrical and Computer Engineering does not guarantee that all elective courses will be offered every session or that it will be possible to fit courses into all of the many possible timetable combinations of students taking the programs. The term in which an elective course is offered is specified each year in the online timetables on the Department website. There may be a maximum limit on the number of students allowed to take an elective in a particular session. Similarly, there may be a minimum limit and if registration is below the minimum, the elective will be cancelled for the session, and those registered will be required to transfer to another elective before the deadline date for course changes.
4. Students are urged to discuss their program of courses with members of the instructional staff toward the end of their third year to obtain advice concerning the best choice of electives for their needs.
5. The science elective course is to be chosen from a list of courses approved by the department.
6. Requires permission of the department.

**Focus Areas in Computer Engineering**

Students wishing to pursue more focused studies in a Computer Engineering subject/research area have the choice of doing so through a Focus Area. Courses taken towards an Area take the place of some or all of the 3 Technical Electives required in Computer Engineering. See <http://www.ece.umanitoba.ca/undergraduate> for a detailed description of each area and the courses required.

[www.ece.umanitoba.ca/undergraduate](http://www.ece.umanitoba.ca/undergraduate) for a detailed description of each area and the courses required.

**Communications Networks (6 courses)**

ECE 3700 Telecommunications Network Engineering\*

ECE 3790 Engineering Algorithms\*

ECE 4240 Microprocessor Interfacing\*

ECE 4260 Communications Systems\*

2 Electives (as specified in this Focus Area)

**Embedded Systems (6 courses)**

COMP 3430 Operating Systems\*

ECE 3740 Systems Engineering Principles 1\*

ECE 3760 Digital System Design 1\*

ECE 4240 Microprocessor Interfacing\*



ECE 4740 Digital System Implementation\*

1 Elective (as specified in this Focus Area)

**Machine Vision (6 courses)**

COMP 3490 Computer Graphics 1

ECE 3790 Engineering Algorithms\*

ECE 4440 Computer Vision

ECE 4830 Signal Processing 2\*

2 Electives (as specified in this Focus Area)

*\*This course is already required as part of the regular program requirements for Computer Engineering.*

**4.9 Electrical and Computer Engineering - 2000 Level**

**ECE 2160** Electronics 2E Cr.Hrs.5  
 (Formerly 024.216) Characteristics of integrated circuits and transistors; design of DC and AC amplifiers in the steady state. Prerequisite: ECE 2262.

**ECE 2220** Digital Logic Systems Cr.Hrs.5  
 (Formerly 024.222) Boolean algebra and logic primitives, net-work simplification techniques, physical realizations, number systems and codes; analysis and design of asynchronous and synchronous sequential circuits; applications to computation, measurements, and control. Prerequisite ENG 1450

**ECE 2240** Numerical Methods for Electrical Engineers Cr.Hrs.4  
 Numerical methods applied to Electrical Engineering problems; mathematical models of physical systems, solutions of linear and non-linear equations, numerical differentiation and integration methods and associated errors, introduction to solution analysis. May not be held with MATH 2120. Prerequisites ECE 2262, COMP 1010, MATH 2132

**ECE 2262** Electric Circuits Cr.Hrs.4  
 The application of circuit concepts; network theorems and formal methods, steady state analysis, frequency and transient response, application of the Laplace transform in the analysis of linear time-invariant networks. Prerequisite: [ENG 1450 (or 130.118). Pre- or corequisite: MATH 2132 or [MATH 2100 or 136.210 and MATH 2110 or 136.211].

**4.9 Electrical and Computer Engineering - 3000 Level**

**ECE 3010** Elements of Electric Machines and Digital Systems Cr.Hrs.4  
 Introduction to elementary concepts in ac circuits, electric machines, and digital sub-systems. Topics include electrical impedance, capacitors, inductors, electric motors, logic

gates, decoders, multiplexing, flip flops, registers, microprocessor structures, I/O and data acquisition. Not available to students in Electrical or Computer Engineering. Prerequisite ENG 1450, MATH 2132, and a year class designation of Year 3 or Year 4.

**ECE 3540** Advanced Circuit Analysis and Design Cr.Hrs.4  
 Application of the Laplace Transform in the analysis of linear time-invariant networks, poles, zeros and frequency response; natural frequencies; general network theorems; two ports; energy and passivity; transmission lines; time and frequency domain. Prerequisite: ECE 2262 (or ECE 2260) and MATH 3132 (or MATH 3100 or 136.310).

**ECE 3580** Foundations of Electromagnetics Cr.Hrs.4  
 (Formerly ECE 2130) Fundamental laws of field theory; Maxwell's equations in integral and point form. Prerequisite: PHYS 2152, MATH 3132 (or MATH 3100)

**ECE 3590** Electromagnetic Theory Cr.Hrs.4  
 Electrostatics; magnetostatics, Maxwell's equations and time-varying electromagnetic fields; polarization, boundary value problems; reflection and refraction; Poynting vector. Prerequisite: ECE 3580 (or the former ECE 2130).

**ECE 3600** Physical Electronics Cr.Hrs.4  
 (Formerly 024.360) Basic solid state theory; properties of semi-conductors; principles of metal-semiconductor junctions, p-n junctions and transistors; optoelectronic processes. Prerequisites: PHYS 2152 or (PHYS 1070 or 016.107) and MATH 3132 or (MATH 3100 or 136.310), and ECE 3670 (or 024.367).

**ECE 3610** Microprocessing Systems Cr.Hrs.4  
 (Formerly 024.361) Fundamentals of microprocessors and microcomputers; data flow; machine programming; architectures and instructions sets; stacks, subroutines, I/O, and interrupts; interfacing fundamentals; designing with microprocessors. Prerequisite: ECE 2220 (or 024.222).

**ECE 3650** Electric Machines Cr.Hrs.5  
 Continuation of ECE 3720, including steady state and transient performance and introductory power systems



theory. Prerequisite: ECE 3720

**ECE 3670** Electronics 3E Cr.Hrs.4  
(Formerly 024.367) Continuation of ECE 2160 (or 024.216), including device models, feedback, regulators, frequency effects, oscillators, and bistability and gates. Prerequisite: ECE 2160 (or 024.216).

**ECE 3700** Telecommunication Network Engineering Cr.Hrs.4  
(Formerly 024.370) This course will introduce modern concepts in telecommunications, including LANs, WANs, telephone networks, wireless and mobile networks, and Internet networks. Focus will be on design engineering, and management of networks, and on network programming for client server architectures. Prerequisite: COMP 2140 (or 074.214).

**ECE 3710** Design of Engineering Software Cr.Hrs.4  
(Formerly 024.371) This course will introduce various practical tools and techniques for developing engineering software. Topics to be covered include: Object oriented analysis and design, data structures, network programming, graphical user interfaces, and software engineering. Prerequisite: COMP 1010 (or 074.101).

**ECE 3720** Electric Power and Machines Cr.Hrs.4  
(Formerly 024.372) Principles and applications of electric power, energy conversion and machines. Prerequisite: ECE 2262 or ENG 1180 (or 130.118).

**ECE 3730** Principles of Embedded System Design Cr.Hrs.4  
This course will introduce students to the design and implementation of embedded systems. Topics include introduction to UML and data structures, A-to-D, D-to-A, serial bus architectures, embedded computing, bus-based computer systems, program design and analysis, networks, and hardware-software co-design. Prerequisites: ECE 2160, ECE 3610 and (COMP 1010 or COMP 1012).

**ECE 3740** Systems Engineering Principles 1 Cr.Hrs.4  
(Formerly 024.374) Complexity and other system measures and analysis, system architectures and architectural elements for embedded systems, hardware and software, incremental design elaboration. Coding, testing, debugging, verification and validation. Project planning, cost analysis and maintenance. Real-time systems, graphical user interfaces and computational models. Prerequisite: COMP 2140 (or 074.214).

**ECE 3750** Systems Engineering Principles 2 Cr.Hrs.4  
(Formerly 024.375) Reliability measures and analysis, software system architectures, system metrics, system verification for embedded systems. Coding practices for large scale embedded system development. Real-time systems, graphical user interfaces, and computational models. Prerequisite: ECE 3740 (or 024.374)

**ECE 3760** Digital Systems Design 1 Cr.Hrs.4  
(Formerly 024.376) Register-transfer and control-sequence design using a hardware description language. Design of finite-state machines with data path definitions and algorithms and algorithmic state machine charts. Hard-ware-software co-design. Prerequisite: ECE 4240 (or 024.424).

**ECE 3770** Digital Systems Design 2 Cr.Hrs.4  
(Formerly 024.377) Executable system specification and a

methodology for system partitioning and refinement into system-level components. Models and architectures, specification languages, translation to an HDL, system partitioning, design quality estimation, specification refinement into synthesizable models. Prerequisite: ECE 4240 (or 024.424) and MATH 3120 (or 136.312).

**ECE 3780** Signal Processing 1 Cr.Hrs.4  
(Formerly 024.378) Introduction to signals and systems; spectral analysis (Fourier Series) of continuous-time periodic signals; spectral analysis of aperiodic signals (Fourier Transform); the impulse response and convolution operator; frequency analysis of linear time-invariant systems; applications to filtering, communications systems, and biological systems; A/D conversion; sampling. Laboratory periods will be used to give students hands-on experience in programming many of the techniques covered in the theoretical parts of the course. Prerequisites: ECE 2262 or ECE 2260 (or 024.226) and MATH 3132 or MATH 3100 (or 136.310).

**ECE 3790** Engineering Algorithms Cr.Hrs.4  
(Formerly 024.379) Numerical algorithms, optimization, statistical description of data random number generation, string processing, geometric algorithms, algorithm machines, dynamic programming and NP complete problems. Prerequisite: COMP 2140 (or 074.214). Pre- or Corequisite: MATH 3132 or MATH 3100 (or 136.310). May not be held with the former 24.451.

## 4.9 Electrical and Computer Engineering - 4000 Level

**ECE 4100** Introduction to Microelectronic Fabrication Cr.Hrs.4  
Introduction to the fabrication of integrated circuits (ICs). Emphasis is on silicon based devices. Topics include water preparation, oxidation, thin film deposition, diffusion and ion implantation, lithography, wet and dry etching and metallization. An introduction to MEMS and micromachining technology is given. Prerequisite: ECE 3670 (or 24.367).

**ECE 4140** Power Transmission Lines; Field Effects and Insulation Coordination Cr.Hrs.4  
(Formerly 024.414) AC and DC transmission line corona and its environmental effects. Electric field calculations; design methods to reduce electric field. Electrostatic and electromagnetic effects. Insulation design for power frequency, switching and lightning induced surges. Insulation coordination - conventional and probabilistic methods. Power apparatus testing - criteria and significance. Prerequisite: ECE 3720 (or 024.372).

**ECE 4150** Control Systems Cr.Hrs.4  
(Formerly 024.415) Principal methods of analysis and design for feedback control systems. Prerequisite: ECE 3780 (or 024.378) or 024.358.

**ECE 4160** Control Engineering Cr.Hrs.4  
(Formerly 024.416) Design of control systems by frequency domain and root locus method; state equations; introduction to nonlinear analysis. Prerequisite: ECE 4150 (or 024.415).

**ECE 4180** Introduction to Robotics Cr.Hrs.4  
This course provides fundamental concepts of robotics, including robot classification and applications, robot



kinematics, sensor and actuators, sensor interfacing, motor control, trajectory planning, and robot programming. Prerequisites: ECE 4150 and ECE 4240.

**ECE 4200** Electric Filter Design Cr.Hrs.4  
Realizability theory, approximation of filtering characteristics, ladder networks and transmission zeros, active RC filter design with regard to sensitivity minimization, phase-shifting and time-delay filters, impulse response of filters, rudiments of digital filters. Prerequisite: ECE 3540 (or ECE 3530).

**ECE 4240** Microprocessor Interfacing Cr.Hrs.4  
(Formerly 024.424) Interfacing of microcomputers to the external world: interfacing of I/O devices with minimum hardware and software; data acquisition with and without microprocessors; data communication, transmission and logging with small computers. Prerequisite: ECE 2160 (or 024.216) and ECE 3610 (or 024.361).

**ECE 4250** Digital Communications Cr.Hrs.4  
(Formerly 024.425) Transmission of digital data; error rates, interference. Information measures, information rate and channel capacity. Coding. Prerequisite: ECE 4260 (or 024.426) and ECE 4830 (or 024.483) or 024.373.

**ECE 4260** Communications Systems Cr.Hrs.4  
(Formerly 024.426) Development and applications of random processes. Analysis and comparison of modulation schemes: AM, FM, PM, PCM. Prerequisites: ECE 3780 (or 024.378) and STAT 2220 (or 005.222).

**ECE 4270** Antennas Cr.Hrs.4  
(Formerly 024.427) Radiation fundamentals, linear antennas, point source arrays, aperture antennas, antenna impedance, antenna systems. Prerequisite: ECE 3590 (or 024.359).

**ECE 4280** Engineering Electromagnetics Cr.Hrs.4  
(Formerly 024.428) Plane, cylindrical and spherical waves, introduction to scattering and diffraction, waveguides, transmission line applications. Prerequisite: ECE 3590 (or 024.359).

**ECE 4290** Microwave Engineering Cr.Hrs.4  
(Formerly 024.429) Microwave circuit analysis; passive and active devices; communication system power budget and signal-to-noise ratio calculations. Prerequisite: ECE 3590 (or 024.359).

**ECE 4300** Electrical Energy Systems 1 Cr.Hrs.4  
(Formerly 024.430) Power system component modelling and computational methods for system problems such as load flow, faults, and stability. Prerequisite: ECE 3650 (or 024.365).

**ECE 4310** Electrical Energy Systems 2 Cr.Hrs.4  
(Formerly 024.431) Generating stations. Power system stability and optimal operation. EHV-ac and HVDC power transmission. Power system protective relaying and reliability evaluation. Prerequisite: ECE 4300 (or 024.430).

**ECE 4360** High Voltage Engineering Cr.Hrs.4  
The course serves as an introduction to high voltage engineering, including basics of electrical breakdown, high voltage generation, high voltage test systems, measurement and analysis techniques as applied to power system apparatus, such as cables, insulators, transformers, and

generators. Prerequisite: ECE 3580, ECE 3720.

**ECE 4370** Power Electronics Cr.Hrs.4  
Thyristor device theory and operation, controlled rectifiers and line-commutated inverters, and forced commutation as applied to d/c choppers and a/c variable frequency and voltage inverters. Prerequisites: ECE 3720 and ECE 2160.

**ECE 4390** Engineering Computations 4E Cr.Hrs.4  
Development and application of numerical methods for the solution of electrical and computer engineering problems. Optimization techniques. Finite difference, finite element and boundary element methods. Solution of large systems of linear and non-linear equations. Prerequisite: MATH 3132, ECE 2240.

**ECE 4420** Digital Control Cr.Hrs.4  
(Formerly 024.442) Mathematical modelling of sampling switches. Z-transforms. Response and stability of systems involving sampling. Design of digital compensators. Prerequisites: ECE 4830 (or 024.483) or 024.373 and ECE 4150 (or 024.415).

**ECE 4440** Computer Vision Cr.Hrs.4  
(Formerly 024.444) Image formation and sensing, image compression, degradation and restoration, geometrical and topological properties, pattern classification, segmentation procedures, line-drawing images, texture analysis, 3-D image processing. Prerequisite: ECE 3780 (or 024.378).

**ECE 4520** Simulation and Modelling Cr.Hrs.4  
(Formerly 024.452) Monte Carlo Methods, random processes, simulation of complex systems in the design of computer systems. Use of statistical interference and measures of performance in hardware and software systems. Prerequisites: STAT 2220 (or 005.222) or 005.250 and COMP 2140 (or 074.214).

**ECE 4530** Parallel Processing Cr.Hrs.4  
(Formerly 024.453) Classification of parallel processors, SIMD vs. MIMD, multiprocessing Vs parallel processing, interconnection topology, communications, and node complexity, pipelining and vector processors, array processors, connection machines, multiprocessors, data flow and VLSI algorithmic machines. Prerequisites: COMP 2140 (or 074.214) and ECE 3760 (or 024.376).

**ECE 4540** Wireless Networks Cr.Hrs.4  
Introduction to wireless communications systems, network architectures, protocols and applications. Topics include mobile computation systems, signals propagation, channel modelling, modulation, and networking standards. Prerequisite: ECE 3700 (or 24.370) (or 24.370), ECE 3780 (or 24.378)

**ECE 4580** Optoelectronics Cr.Hrs.4  
(Formerly 024.458) Basic theory of quantum mechanics; solution of Schrodinger equations; interaction of radiation with matter; masers and lasers; propagation, modulation, excitation and detection in optical waveguides; introduction to fiber and integrated optics. Prerequisite: ECE 3600 (or 024.360).

**ECE 4600** Group Design Project Cr.Hrs.6  
(Formerly 024.460) The engineering curriculum must culminate in a significant design experience which is based on the knowledge and skills acquired in earlier course work



and which gives students an exposure to the concepts of team work and project management. Prerequisites: ENG 2010 and ECE 3780; and either the four courses ECE 3580, ECE 3720, ECE 3670 and ECE 3610; or the four courses ECE 3670, ECE 3700, ECE 3760 and ECE 3740.

**ECE 4610** Biomedical Instrumentation and Signal Processing Cr.Hrs.4

Introduction to biological systems and the application of engineering principles to medical problems. Students design systems to acquire and analyze biological signals in the laboratory. Content includes introduction to relevant physiology and anatomy of cells, skeletal muscles, heart and cardiovascular systems, human balance and biomechanics, recording and analyzing biological signals (ECG, EMG, respiratory sounds), design of instrumentation amplifiers for signal conditioning, medical instrumentation safety and health hazards. Prerequisites: ECE 2160 and ECE 3780.

**ECE 4720** Industry Internship Cr.Hrs.0

(Formerly 024.472) Industry Internship Supervised work experience, normally of 12-16 month's duration, concluded by a work report. (Pass-Fail grade only).

**ECE 4740** Digital Systems Implementation Cr.Hrs.4

(Formerly 024.474) Implementation methodologies and technologies for digital systems, including VLSI implementations, PCB implementations, and rapid prototyping (FPGA). Prerequisite: ECE 4240 (or 024.424). Not to be held with ECE 4500 (or 024.450).

**ECE 4770** Topics in Electrical Engineering 3 Cr.Hrs.4

(Formerly 024.477) This course will cover contemporary topics in Electrical Engineering via lectures and laboratory sessions. The specific topics and a detailed course outline will be available at the time of registration. Prerequisite: Permission of the Department.

**ECE 4830** Signal Processing 2 Cr.Hrs.4

(Formerly 024.483) Representation of discrete-time signals and systems in the time and frequency domains; the z-transform; application to various discrete-time linear time-invariant systems; design of digital filters. Laboratory periods will be used to give students hands-on experience in programming many of the techniques covered in the theoretical parts of the course. Prerequisite: ECE 3780 (or 024.378).

**ECE 4850** Topics in Electrical and Computer Engineering 1 Cr.Hrs.4

This course will cover contemporary topics in Electrical and Computer Engineering via lectures and laboratory sessions. The specific topics and a detailed course outline will be available at the time of registration. Prerequisite: Permission of the Department.

**ECE 4860** Topics in Electrical and Computer Engineering 2 Cr.Hrs.4

This course will cover contemporary topics in Electrical and Computer Engineering via lectures and laboratory sessions. The specific topics and a detailed course outline will be available at the time of registration. Prerequisite: Permission of the Department.

**ECE 4870** Topics in Electrical and Computer Engineering 3 Cr.Hrs.3

This lecture based course will cover contemporary topics in Electrical and Computer Engineering. The specific topics and a detailed course outline will be available at the time of registration. Prerequisite: Permission of the Department.

**ECE 4880** Topics in Electrical and Computer Engineering 4 Cr.Hrs.3

This lecture based course will cover contemporary topics in Electrical and Computer Engineering. The specific topics and a detailed course outline will be available at the time of registration. Prerequisite: Permission of the Department.

**4.10 Mechanical and Manufacturing Engineering**

**General Office:** E2 -327 EITC

**Telephone:** (204) 474 9804 / 6630

**Fax:** (204) 275 7507

**Website:**

[umanitoba.ca/faculties/engineering/departments/mechanical/](http://umanitoba.ca/faculties/engineering/departments/mechanical/)

**Head:** D. Kuhn

**Associate Heads:** M. Birouk and M. Tachie

The Department of Mechanical and Manufacturing Engineering offers fully accredited degree programs in Mechanical Engineering and Manufacturing Engineering. Students entering the Mechanical Engineering program in September 2009 for the 2009/2010 regular session and thereafter may specialize with an option in Aerospace or Manufacturing, or a stream in Materials, Solid Mechanics, or Thermofluids. No new students will be accepted into the Manufacturing Engineering program as of September 2009. Students are urged to consult appropriate program requirements shown for each program/option.

The Mechanical Engineering program provides the education required by those who wish to practice in Mechanical Engineering that embraces, among other subdivisions, the design of mechanical devices and systems, manufacturing engineering and management, computer-aided design and computer-aided manufacturing, power generation and utilization, air conditioning, the material sciences, and the aeronautical sciences. The program places special emphasis on the use of computers in solving engineering problems.

The Manufacturing Engineering program is comprised of a thorough study in the engineering sciences followed by courses directly related to the field. The students will acquire creative and analytic skills to apply scientific approach to study macro/micro components of manufacturing systems. Advanced technologies such as robots, computer controlled machine tools, automation, mechatronics, production control methods and analysis of manufacturing systems and processes will be emphasized.

Both programs offer basic training in the sciences, mathematics and fundamental engineering subjects followed by more specialized discipline-related subjects. During the programs, arrangements are made for conducted visits to local power and industrial plants. Students are allowed to choose technical electives to suit their career objectives and are also required to take complementary studies electives related to social issues.



### Co-operative Education Programs

**Director:** R. Derksen

**Co-op Coordinator:** Bernice Ezirim

The Department of Mechanical and Manufacturing Engineering offers a Co-operative Education Program in which academic study is complemented and enriched with practical work experience. The work terms provide students with practical experience, assistance in financing their education, and guidance for future career specialization.

Mechanical and Manufacturing Engineering Students who have successfully completed all courses in first year and first term of second year of Engineering are eligible to apply for admission into the program. Admission to Co-op occurs during the first academic term of second year for placement in May. Final acceptance into the program is dependent upon the student receiving a job placement through the Co-operative Education office. Students may seek employment on their own, but must consult with the Co-op Coordinator before doing so. Upon acceptance, Mechanical Engineering students enrol in the course MECH 2050, Mechanical Engineering Co-operative Education Assignment (and subsequently, MECH 3050, MECH 4050, and the optional MECH 4060) for the specific work term of employment. Corresponding courses for the Manufacturing Engineering program are MECH 3910, MECH 3920, MECH 4910, and the optional MECH 4920.

Each successfully completed work term and its corresponding work term report are rated at one credit hour. Graduates who successfully complete at least three work terms and the required work term reports will have the words "Co-operative Education Option" printed on their diplomas.

### Program Core Courses:

Course No.		Credit Hours
CHEM 2240	Applied Chemistry for Engineers	3
	OR	
CHEM 1310	An Introduction to Physical Chemistry	3
CIVL 4050	Engineering Economics	3
CIVL 4460	Technology, Society, and the Future	3
	OR	
ANTH 2430	Ecology, Technology and Society (B)	3
ECE 3010	Elements of Electric Machines and Digital Systems	4
ENG 2010	Technical Communications	3
MATH 2120	Introductory Numerical Methods for Engineers	4
MATH 2130	Engineering Mathematical Analysis 1	3
MATH 2132	Engineering Mathematical Analysis 2	3
MATH 3132	Engineering Mathematical Analysis 3	3
MECH 2012	Computer Aided Design and Manufacturing Processes	4
MECH 2202	Thermodynamics	4
MECH 2222	Mechanics of Materials	4
MECH 2262	Fundamentals of Fluid Mechanics	4
MECH 2272	Engineering Materials 1	4
MECH 3170	Project Management	4
MECH 3420	Vibrations and Acoustics	4
MECH 3430	Measurements and Control	4
MECH 3460	Heat Transfer	4
MECH 3482	Kinematics and Dynamics	4
MECH 3492	Fluid Mechanics and Applications	4
MECH 3502	Stress Analysis and Design	4
MECH 3542	Engineering Materials 2	4
MECH 3980	Mechanical Engineering Laboratory (full year)	4

For more information regarding the Co-op Program requirements, please see the Co-op Coordinator.

### Mechanical Engineering Industry Internship Program (MEIIP)

The Mechanical and Manufacturing Engineering Department offers an Industry Internship Program in Mechanical and Manufacturing Engineering. Upon successful completion of 120 credit hours, a student has the opportunity of spending a continuous work term period of twelve to sixteen months in industry. Interested students may apply in the first term of third year. After an internship placement has been secured the student registers for course MECH 4930. One technical report is submitted upon completion of the internship. Students may obtain additional information from the Co-op Coordinator.

### Mechanical Engineering Program – NEW For students entering Mechanical Engineering as of September 2009

#### Preliminary Engineering Program

Common to all Engineering Programs. (See Section 4.2 for details.)



MECH 4650 Machine Design 4M	4
MECH 4860 Engineering Design	5
PHYS 1070 Physics 2: Waves and Modern Physics	3
STAT 2220 Contemporary Statistics for Engineers	3
5 Technical Electives (TE)	4
1 Complimentary Studies Elective (CE)	3

**NOTES:**

1. A student's selection and timetabling of electives are subject to the following con-ditions:

- Only one complementary elective is required upon completion of Critical Thinking (PHIL 1290) and English (ENGL 1310) in the preliminary program.

- The complementary studies elective can be any course at the 1000-level or above from the faculties of Arts or Management. However, ARTS 1110 Introduction to Uni-versity may not be used for credit in the Faculty of Engineering.

2. For courses continuing through both terms, credit is given on completion of course.

3. A minimum of 20 credit hours of technical electives is required.

#### 4.10 Aerospace Option

##### 4.10.2 Aerospace Option - NEW, Aerospace Option – NEW as of September 2009-2010

Course No.	Credit Hours
MECH 3520 Aerodynamics	4
MECH 4182 Aerospace Structures: Analysis and Design	4
<b>Choose all 5 courses.</b>	
MECH 4192 Aerospace Materials and Manufacturing Processes	4
MECH 4200 Gas Turbine Propulsion Systems	4
MECH 4452 Aircraft Performance, Dynamics, and Design	4

#### 4.10 Manufacturing Option

##### 4.10.3 Manufacturing Option - NEW, Manufacturing Option – NEW as of September 2009

**Choose 5 from the following 10 courses. Some courses will be offered in alternating years.**

Course No.	Credit Hours
MECH 3550 Robotics and Computer Numerical Control	4
MECH 3562 Introduction to Optimization	4
MECH 3570 Manufacturing Automation	4
MECH 3582 Manufacturing Planning and Quality Control	4
MECH 3592 Simulation Modelling and Facilities Planning	4
MECH 3602 Manufacturing Process Fundamentals	4
MECH 4330 Contemporary Topics in Manufacturing Engineering 1	4
MECH 4342 Contemporary Topics in Manufacturing Engineering 2	4
MECH 4960 Mechatronics Systems Design	4
MECH 4960 Manufacturing Processes 1	4
MECH 4970 Manufacturing Processes 2	4



## 4.10 Materials Stream

### 4.10.4 Materials Stream - NEW, Materials Stream – NEW as of September 2009

Choose 3 from the following 5 courses. Choose the remaining two TEs from the same stream, other TEs, or thesis. Some courses will be offered in alternating years.

Course No.		Credit Hours
MECH 4192	Aerospace Materials and Manufacturing Processes	4
MECH 4350	Topics in Materials 1	4
MECH 4360	Topics in Materials 2	4
MECH 4620	Corrosion of Metals and Alloys	4
MECH 4870	Fracture and Failure of Engineering Materials	4

## 4.10 Solid Mechanics Stream

### 4.10.5 Solid Mechanics Stream - NEW, Solid Mechanics Stream – NEW as of September 2009

Choose 3 from the following 6 courses. Choose the remaining two TEs from the same stream, other TEs, or thesis. Some courses will be offered in alternating years.

Course No.		Credit Hours
MECH 4182	Aerospace Structures: Analysis and Design	4
MECH 4472	Mechanical Vibration	4
MECH 4510	Fundamentals of Finite Element Analysis	4
MECH 4532	Advanced Strength of Materials	4
MECH 4550	Noise Control	4
MECH 4672	Advanced Mechanical Design	4

## 4.10 Thermofluids Stream

### 4.10.6 Thermofluids Stream - NEW, Thermofluids Stream – NEW as of September 2009

Choose 3 from the following 8 courses. Choose the remaining two TEs from the same stream, other TEs, or thesis. Some courses will be offered in alternating years.

Course No.		Credit Hours
MECH 4292	IC Engines	4
MECH 4412	Heating, Venting, and Air Conditioning	4
MECH 4560	Selected Topics in Fluid Mechanics 4M	4
MECH 4680	Energy Conversion Utilization	4
MECH 4692	Renewable Energy	4
MECH 4694	Advanced Topics in Heat Transfer	4
MECH 4702	Design of Thermal Systems	4
MECH 4822	Numerical Heat Transfer in Fluid Flow	4

## Technical Electives in Mechanical Engineering - NEW

### 4.10.7 Technical Electives in Mechanical Engineering - NEW, Technical Electives in Mechanical Engineering - NEW

Course No.		Credit Hours
MECH 3520	Aerodynamics	4
MECH 3550	Robotics and Computer Numerical Control	4
MECH 3562	Introduction to Optimization	4
MECH 3570	Manufacturing Automation	4



MECH 3582	Manufacturing Planning and Quality Control	4
MECH 3592	Simulation Modelling and Facilities Planning	4
MECH 3602	Manufacturing Processes Fundamentals	4
MECH 4900	Mechatronics Systems Design	4
MECH 4162	Thesis (full year course) (See Note 2)	6
MECH 4182	Aerospace Structures: Analysis and Design	4
MECH 4192	Aerospace Materials and Manufacturing Processes	4
MECH 4200	Gas Turbine Propulsion Systems	4
MECH 4240	Design for Manufacturing	4
MECH 4292	IC Engines	4
MECH 4310	Contemporary Topics in Mechanical Engineering 1	4
MECH 4322	Contemporary Topics in Mechanical Engineering 2	4
MECH 4330	Contemporary Topics in Manufacturing Engineering 1	4
MECH 4342	Contemporary Topics in Manufacturing Engineering 2	4
MECH 4350	Topics in Materials 1	4
MECH 4360	Topics in Materials 2	4
MECH 4412	Heating, Venting, and Air Conditioning	4
MECH 4452	Aircraft Performance, Dynamics, and Design	4
MECH 4472	Mechanical Vibration	4
MECH 4510	Fundamentals of Finite Element Analysis	4
MECH 4532	Advanced Strength of Materials	4
MECH 4550	Noise Control	4
MECH 4560	Selected Topics in Fluid Mechanics 4M	4
MECH 4620	Corrosion of Metals and Alloys	4
MECH 4672	Advanced Mechanical Design	4
MECH 4680	Energy Conversion Utilization	4
MECH 4692	Renewable Energy	4
MECH 4694	Advanced Topics in Heat Transfer	4
MECH 4702	Design of Thermal Systems	4
MECH 4812	Automotive Engineering	4
MECH 4822	Numerical Heat Transfer in Fluid Flow	4
MECH 4870	Fracture and Failure of Engineering Materials	4
MECH 4900	Mechatronics System Design	4
MECH 4960	Manufacturing Processes 1	4
MECH 4970	Manufacturing Processes 2	4

NOTES:

1. The Department of Mechanical and Manufacturing Engineering may not be able to offer all technical electives listed above. Students are urged to consult the Mechanical and Manufacturing Engineering office for a current list of technical electives.
2. Students must be in their graduating year to register for MECH 4162 Thesis.

#### 4.10.8 Mechanical Engineering Program - Prior to September 2009, Mechanical Engineering Program

For students that entered Mechanical Engineering prior to 2009/2010

##### Preliminary Engineering Program

Common to all Engineering Programs. (See Section 4.2 for details.)

##### Mechanical Program Core Courses:

Course No.		Credit Hours
CHEM 2240	Applied Chemistry for Engineers	3
	OR	
CHEM 1310	An Introduction to Physical Chemistry	3
CIVL 4050	Engineering Economics (former 23.483)	3
CIVL 4460	Technology, Society, and the Future	3
	OR	
ANTH 2430	Ecology, Technology and Society (B)	3
ECE 3010	Elements of Electric Machines and Digital Systems (formerly ECE 3720 or ECE 3680)	4
ENG 2010	Technical Communications	3
MATH 2120	Introductory Numerical Methods for Engineers	4
MATH 2130	Engineering Mathematical Analysis 1	3
MATH 2132	Engineering Mathematical Analysis 2	3



MATH 3132 Engineering Mathematical Analysis 3	3
MECH 2012 Computer Aided Design and Manufacturing Processes (replaces MECH 2010)	4
MECH 2120 Mechanics of Machines	4
MECH 2202 Thermodynamics (formerly MECH 2200)	4
MECH 2222 Mechanics of Materials (formerly MECH 2220)	4
MECH 2262 Fundamentals of Fluid Mechanics (formerly MECH 2260)	4
MECH 2270 Principles of Engineering Materials	4
MECH 2290 Manufacturing Engineering	3
MECH 3170 Project Management (replaces MECH 2300)	4
MECH 3420 Vibrations and Acoustics	4
MECH 3430 Measurements and Control	4
MECH 3460 Heat Transfer	4
MECH 3480 Dynamics	3
MECH 3492 Fluid Mechanics and Applications (formerly MECH 3490)	4
MECH 3502 Stress Analysis and Design (formerly MECH 3500)	4
MECH 3540 Modern Engineering Materials	4
MECH 3980 Mechanical Engineering Laboratory (replaces MECH 4980 and MECH 4990)	4
MECH 4160 Graduation Thesis (See Note 3)	3
MECH 4650 Machine Design 4M	4
MECH 4680 Energy Conversion and Utilization	4
OR	
MECH 4692 Renewable Energy	4
MECH 4822 Numerical Heat Transfer in Fluid Flow (formerly MECH 4820)	4
MECH 4860 Engineering Design	5
PHYS 1070 Physics 2: Waves and Modern Physics	3
STAT 2220 Contemporary Statistics for Engineers	3
3 Technical Electives (TE)	3/4
1 Complimentary Studies Elective (CE)	3

NOTES:

1. A student's selection and timetabling of electives are subject to the following conditions:

- Only one complementary elective is required upon completion of Critical Thinking (PHIL 1290) and English (ENGL 1310) in the preliminary program.

- The complementary studies elective can be any course at the 1000-level or above from the faculties of Arts or Management. However, ARTS 1110 Introduction to University may not be used for credit in the Faculty of Engineering.

2. For courses continuing through both terms, credit is given on completion of course.

3. Students must be in their graduating year to register for MECH 4160 Graduation Thesis. For those students graduating in December, register in A01 (first term) section of MECH 4160, and if graduating in May, register in A02 (second term) section of MECH 4160.

4. A minimum of 9 credit hours of technical electives is required.

#### 4.10.9 Aerospace Engineering Option - prior to September 2009, Aerospace Engineering Option

##### For students that entered Mechanical Engineering prior to 2009/2010.

The Department of Mechanical and Manufacturing Engineering Aerospace option is open to all third year students in the Mechanical Engineering program and requires two years to complete after second year Mechanical Engineering. The option consists of five courses. These courses replace an equivalent number of courses in the Mechanical Engineering curriculum.

##### Preliminary Engineering Program

Common to all Engineering Programs. (See Section 4.2 for details.)

##### Aerospace Program Core Courses:

Course No.		Credit Hours
CHEM 2240	Applied Chemistry for Engineers	3
CIVL 4050	Engineering Economics (former 23.483)	3
CIVL 4460	Technology, Society, and the Future	3



	OR	
ANTH 2430	Ecology, Technology and Society (B)	3
ENG 2010	Technical Communications	3
MATH 2120	Introductory Numerical Methods for Engineers	4
MATH 2130	Engineering Mathematical Analysis 1	3
MATH 2132	Engineering Mathematical Analysis 2	3
MATH 3132	Engineering Mathematical Analysis 3	3
MECH 2012	Computer Aided Design and Manufacturing Processes (replaces MECH 2010)	4
MECH 2120	Mechanics of Machines	4
MECH 2202	Thermodynamics (formerly MECH 2200)	4
MECH 2222	Mechanics of Materials (formerly MECH 2220)	4
MECH 2262	Fundamentals of Fluid Mechanics (formerly MECH 2260)	4
MECH 2270	Principles of Engineering Materials	4
MECH 2290	Manufacturing Engineering	3
MECH 3170	Project Management (replaces MECH 2300)	4
MECH 3420	Vibrations and Acoustics	4
MECH 3430	Measurements and Control	4
MECH 3460	Heat Transfer	4
MECH 3480	Dynamics	3
MECH 3492	Fluid Mechanics and Applications (formerly MECH 3490)	4
MECH 3502	Stress Analysis and Design (formerly MECH 3500)	4
MECH 3520	Aerodynamics	4
MECH 3540	Modern Engineering Materials	4
MECH 3980	Mechanical Engineering Laboratory (replaces MECH 4980 and MECH 4990)	4
MECH 4160	Graduation Thesis (See Note 3)	3
MECH 4170	Program Management and Systems Engineering (See Note 4)	3
MECH 4182	Aerospace Structures: Analysis and Design	4
MECH 4192	Aerospace Materials and Manufacturing Processes	4
MECH 4200	Gas Turbine Propulsion Systems	4
MECH 4452	Aircraft Performance, Dynamics, and Design	4
MECH 4860	Engineering Design	5
PHYS 1070	Physics 2: Waves and Modern Physics	3
STAT 2220	Contemporary Statistics for Engineers	3
	2 Technical Electives (TE) (See Note 4)	6
	1 Complimentary Studies Elective (CE)	3

**NOTES:**

1. A student's selection and timetabling of electives are subject to the following conditions:
  - Only one complementary elective is required upon completion of Critical Thinking (PHIL 1290) and English (ENGL 1310) in the preliminary program.
  - The complementary studies elective can be any course at the 1000-level or above from the faculties of Arts or Management. However, ARTS 1110 Introduction to Uni-versity may not be used for credit in the Faculty of Engineering.
2. For courses continuing through both terms, credit is given on completion of course.
3. Students must be in their graduating year to register for MECH 4160 Graduation Thesis. For those students graduating in December, register in A01 (first term) section of MECH 4160, and if graduating in May, register in A02 (second term) section of MECH 4160.
4. A minimum of 3 credit hours of technical electives is required. If students have not completed required course MECH 4170 prior to September 2009, another Technical Elective must be taken in its place.

**4.10.10 Technical Electives in Mechanical Engineering - prior to September 2009, Technical Electives in Mechanical Engineering**

**For students who entered the Mechanical Engineering program prior to September 2009.**

Course No.		Credit Hours
MECH 3520	Aerodynamics	4
MECH 3550	Robotics and Computer Numerical Control	4
MECH 3562	Introduction to Optimization (formerly MECH 3560)	4
MECH 3570	Manufacturing Automation	4



MECH 3582	Manufacturing Planning and Quality Control	4
MECH 3592	Simulation Modelling and Facilities Planning	4
MECH 3602	Manufacturing Processes Fundamentals (See Note 5)	4
MECH 4182	Aerospace Structures: Analysis and Design	4
MECH 4192	Aerospace Materials and Manufacturing Processes	4
MECH 4200	Gas Turbine Propulsion Systems	4
MECH 4240	Design for Manufacturing	4
MECH 4292	IC Engines	4
MECH 4310	Contemporary Topics in Mechanical Engineering 1	4
MECH 4322	Contemporary Topics in Mechanical Engineering 2	4
MECH 4330	Contemporary Topics in Manufacturing Engineering 1	4
MECH 4342	Contemporary Topics in Manufacturing Engineering 2	4
MECH 4412	Heating, Ventilation, and Air Conditioning	4
MECH 4452	Aircraft Performance, Dynamics, and Design	4
MECH 4472	Mechanical Vibration	4
MECH 4532	Advanced Strength of Materials	4
MECH 4550	Noise Control	4
MECH 4560	Selected Topics in Fluid Mechanics 4M	4
MECH 4620	Corrosion of Metals and Alloys	4
MECH 4672	Advanced Mechanism Design	4
MECH 4692	Renewable Energy	4
MECH 4694	Advanced Topics in Heat Transfer	4
MECH 4702	Thermal Systems Design	4
MECH 4812	Automotive Engineering and Design	4
MECH 4870	Fracture and Failure of Engineering Materials	4
MECH 4900	Mechatronics Systems Design	4
MECH 4960	Manufacturing Process 1	4
MECH 4970	Manufacturing Process 2	4

**NOTES:**

1. The Department of Mechanical and Manufacturing Engineering may not be able to offer all technical electives listed above. Students are urged to consult the Mechanical and Manufacturing Engineering office for a current list of technical electives.
2. Core courses in Manufacturing Engineering that are not part of the core program in Mechanical Engineering will be accepted as technical electives in Mechanical Engineering. Similarly, core courses in Mechanical and Manufacturing Engineering that are not part of the core program in the Aerospace option will be accepted as technical electives in the Aerospace option. The associate head of Mechanical and Manufacturing Engineering must approve these electives.
3. There will normally be a minimum registration limit of six students for each technical elective. If registration is below the minimum, the elective will be cancelled for the session, and those registered will be required to transfer to another course before the course-changing date.
4. Students are urged to discuss their elective courses with members of the instructional staff toward the end of their second year in order to obtain advice concerning the best choice of electives to meet their needs.
5. MECH 3602 will be offered through Red River College as an equivalent course. Credit will be granted upon completion of the RRC course taken on a Letter of Permission. See department for details.

#### 4.10.11 Manufacturing Engineering Degree, Manufacturing Engineering Degree

For students that entered Manufacturing Engineering prior to 2009/2010

##### Preliminary Engineering Program

Common to all Engineering Programs. (See Section 4.2 for details.)

Manufacturing Program Core Courses:

Course No.		Credit Hours
CHEM 2240	Applied Chemistry for Engineers	3
CIVL 4050	Engineering Economics (former 23.483)	3
CIVL 4460	Technology, Society, and the Future	3
	OR	
ANTH 2430	Ecology, Technology and Society (B)	3



ECE 3010	Elements of Electric Machines and Digital Systems (for-merly ECE 3720 or ECE 3680)	4
ENG 2010	Technical Communications	3
MATH 2120	Introductory Numerical Methods for Engineers	4
MATH 2130	Engineering Mathematical Analysis 1	3
MATH 2132	Engineering Mathematical Analysis 2	3
MATH 3132	Engineering Mathematical Analysis 3	3
MECH 2012	Computer Aided Design and Manufacturing Processes (re-places MECH 2010)	4
MECH 2120	Mechanics of Machines	4
MECH 2202	Thermodynamics (formerly MECH 2200)	4
MECH 2222	Mechanics of Materials (formerly MECH 2220)	4
MECH 2262	Fundamentals of Fluid Mechanics (formerly MECH 2260)	4
MECH 2270	Principles of Engineering Materials	4
MECH 2290	Manufacturing Engineering	3
MECH 3170	Project Management (replaces MECH 2300)	4
MECH 3420	Vibrations and Acoustics	4
MECH 3430	Measurements and Control	4
MECH 3480	Dynamics	3
MECH 3502	Stress Analysis and Design (formerly MECH 3500)	4
MECH 3540	Modern Engineering Materials	4
MECH 3550	Robotics and Computer Numerical Control	4
MECH 3562	Introduction to Optimization (formerly MECH 3560)	4
MECH 3570	Manufacturing Automation	4
MECH 3582	Manufacturing Planning and Quality Control	4
MECH 3592	Simulation Modelling and Facilities Planning	4
MECH 4160	Graduation Thesis (or TE33; see Notes 3 & 4)	3
MECH 4650	Machine Design 4M	4
MECH 4680	Energy Conversion and Utilization	4
	OR	
MECH 4692	Renewable Energy	4
MECH 4860	Engineering Design	5
MECH 4900	Mechatronics System Design	4
MECH 4960	Manufacturing Process I	4
MECH 4970	Manufacturing Process II	4
PHYS 1070	Physics 2: Waves and Modern Physics	3
STAT 2220	Contemporary Statistics for Engineers	3
	2 Technical Electives (TE) (See Note 5)	3/4
	1 Complimentary Studies Elective (CE)	3

**NOTES:**

1. A student's selection and timetabling of electives are subject to the following con-ditions:
  - Only one complementary elective is required upon completion of Critical Thinking (PHIL 1290) and English (ENGL 1310) in the preliminary program.
  - The complementary studies elective can be any course at the 1000-level or above from the faculties of Arts or Management. However, ARTS 1110 Introduction to Uni-versity may not be used for credit in the Faculty of Engineering.
2. For courses continuing through both terms, credit is given on completion of course.
3. Students must be in their graduating year to register for MECH 4160 Graduation Thesis. For those students graduating in December, register in A01 (first term) section of MECH 4160, and if graduating in May, register in A02 (second term) section of MECH 4160.
4. For students in Manufacturing Engineering, there is a choice between graduation thesis and a technical elective from List B (see below).
5. Students are required to take a total of two technical electives (one from List A and one from list B) from the approved list of technical electives for Manufacturing Engi-neering. If the student elects to do a graduation thesis (MECH 4160), then only one technical elective (List A) is required.

**4.10.12 Technical Electives in Manufacturing Engineering,  
Technical Electives in Manufacturing Engineering**

Course No. Credit Hours  
Choose one from List A and one from List B OR one from List A and a grad-uation thesis project (MECH 4160).



LIST A		
ECE 3010	Elements of Electric Machines and Digital Systems	4
ECE 4240	Microprocessor Interfacing	4
MECH 3460	Heat Transfer	4
MECH 3492	Advanced Fluid Mechanics and Design	4
MECH 3520	Aerodynamics	4
MECH 3602	Manufacturing Processes Fundamentals (see note 4.)	4
MECH 4182	Aerospace Structures: Analysis and Design	4
MECH 4192	Aerospace Materials and Manufacturing Processes	4
MECH 4200	Gas Turbine Propulsion Systems	4
MECH 4240	Design for Manufacturing	4
MECH 4292	IC Engines	3
MECH 4310	Contemporary Topics in Mechanical Engineering 1	4
MECH 4322	Contemporary Topics in Mechanical Engineering 2	4
MECH 4330	Contemporary Topics in Manufacturing Engineering 1	4
MECH 4342	Contemporary Topics in Manufacturing Engineering 2	4
MECH 4412	Heating, Ventilation, and Air Conditioning	4
MECH 4452	Aircraft Performance, Dynamics, and Design	4
MECH 4472	Mechanical Vibration	4
MECH 4550	Noise Control	4
MECH 4620	Corrosion of Metals and Alloys	4
MECH 4672	Advanced Mechanism Design	4
MECH 4692	Renewable Energy	4
MECH 4694	Advanced Topics in Heat Transfer	4
MECH 4702	Design of Thermal Systems	4
MECH 4812	Automotive Engineering and Design	4
MECH 4870	Fracture and Failure of Engineering Materials	4
BIOE 4390	Unit Operations 1	4
ECOL 3420	Apparel Manufacturing	4
LIST B		
ACC 1100	Introduction to Financial Accounting	3
MKT 2210	Fundamentals of Marketing	4
MKT 3240	Selected Topics in Marketing	3
LABR 3060	Workplace Health and Safety or	3
LABR 3070	Labour Relations and Occupational Safety and Health Law	3

**NOTES:**

1. Core or technical elective courses in Mechanical Engineering that are not part of the core program in Manufacturing Engineering will be accepted as technical electives in Manufacturing Engineering.
2. The Department of Mechanical and Manufacturing Engineering may not be able to offer all of the technical electives that are shown. Students are urged to consult the Mechanical and Manufacturing Engineering office for a list of technical electives that will be offered in that year.
3. There will normally be a minimum registration limit of six students for each technical elective. If registration is below the minimum, the elective will be cancelled for the session, and those registered will be required to transfer to another course before the final date for registration revisions.
4. MECH 3602 will be offered through Red River College as an equivalent course. Credit, therefore, will be granted upon completion of the RRC course. Students should consult the department regarding scheduling.
5. Courses from the Faculty of Management that do not appear in the list above may be used as a technical elective for List B subject to approval by the Department of Mechanical and Manufacturing Engineering.

**4.11 Mechanical and Manufacturing Engineering -2000 Level**

**MECH 2012** Computer Aided Design and Manufacturing Processes Cr.Hrs.4

Provide instruction on the application of computer aided design software packages. The students will work in groups in the design and development of a product using CAD packages. The course will be delivered through a combination of lectures and tutorials. ENG 1430 (formerly 130.113 or 130.140). Not to be held with MECH 2010 or CIVL 2830.

**MECH 2050** Mechanical Engineering Coop Education Assignment 1 Cr.Hrs.1

Special work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment, and in-depth presentation of related engineering problems. Not to be held with the former 025.205. (Pass/Fail grade only)

**MECH 2202** Thermodynamics Cr.Hrs.4

Cycles, transient flow processes, entropy, gas mixtures, psychrometry combustion. Prerequisites: ENG 1460 (or 130.112), (MATH 1500 (or 136.150) or MATH 1510 (or



136.151) and MATH 1700 (or 136.170) or MATH 1710 (or 136.171) Not to be held for credit with MECH 2200 or 025.220

**MECH 2222** Mechanics of Materials Cr.Hrs.4

Topics covered in this course include: axial and torsional loading, stress-strain and deformation in statically determinate/indeterminate systems, thermally induced stress, and stresses in beams (including reinforced beams) under pure bending and bending with shear. The mechanical properties of materials under various loading modes will be addressed. Prerequisites: [PHYS 1050 (or 016.105)] and [ENG 1440 (ENG 1350 or 130.135)] and COMP 1010 or COMP 1012 (074.101) and [MATH 1710 (136.171) or MATH 1700 (136.170)].

**MECH 2262** Fundamentals of Fluid Mechanics Cr.Hrs.4

Fundamental concepts used in the analysis of fluid behaviour, pressure in stationary fluids, forces on submerged surfaces, buoyancy, integral methods, Bernoulli equation, pipeline analysis. Prerequisites: MATH 2130 or MATH 2110 (formerly 136.211). Pre or Co requisite: MATH 2132 or MATH 2100 (formerly 136.210). Not to be held for credit with MECH 2260 (or 025.226)

**MECH 2272** Engineering Materials 1 Cr.Hrs.4

Introduction to engineering materials; defects, strengthening mechanisms, and plasticity in engineering metals and alloys; fundamentals and application of heat treatment of metallic materials including topics such as diffusion, phase diagram, phase transformation, and thermal processing; mechanical properties of engineering metallic materials and their relationship to structure, defects, various strengthening mechanisms, and processing; structure of non-metallic polymers and ceramics. Prerequisites: [CHEM 2240 (002.224) or CHEM 1310 (002.131)] and [MECH 2222 (or MECH 2220 or 025.222)]. Not to be held for credit with MECH 2270 (or 025.227), MECH 2290 (or 025.229) or MECH 3540 (or 025.354)

#### 4.11 Mechanical and Manufacturing Engineering -3000 Level

**MECH 3050** Mechanical Engineering Coop Education Assignment 2 Cr.Hrs.1

Special work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment, and in-depth presentation of related engineering problems. Not to be held for credit with the former 025.305. (Pass/Fail grade only). Prerequisite: MECH 2050 (or 025.205).

**MECH 3170** Project Management Cr.Hrs.4

Topics covered in this course will include project planning, scheduling, resource allocation, process analysis, layout and control. The course will make use of industrial projects for developing a strong design and analytical approach pertinent to project management. Prerequisites: MECH 2012 (or MECH 2010) or CIVL 2830. Not to be held for credit with MECH 4170 (or 025.417).

**MECH 3420** Vibrations and Acoustics Cr.Hrs.4

Vibrations and computer simulations of single-degree-of-freedom systems, viscous and friction damping, MD of systems and modal analysis, measurement and sources of

noise, noise control. Prerequisites: MECH 3482 (formerly MECH 2120 (or 025.212) and MECH 3480 (or 025.348)), and MATH 3132 (formerly MATH 3100) (or 136.310). Not to be held for credit with the former 025.342.

**MECH 3430** Measurements and Control Cr.Hrs.4

Mathematical modelling of mechanical systems. Feedback systems and stability. Digital control; analog to digital and digital to analog control systems. Prerequisites: MATH 3132 (or MATH 3100) (or 136.310) and ENG 1450 (or 130.118). Not to be held for credit with the former 025.343.

**MECH 3460** Heat Transfer Cr.Hrs.4

Steady-state and transient heat conduction, fins. Forced and free convection, laminar and turbulent conditions, internal and external flows. Heat exchangers. Radiation properties and exchange. Prerequisites: MATH 3132 (formerly MATH 3100) (or 136.310) and ENG 1460 (or 130.112). May not be held with MECH 3470 or the former 025.347.

**MECH 3482** Kinematics and Dynamics Cr.Hrs.4

Fundamentals of 2D and 3D rigid body motions (kinematics) and the forces/moments (kinetics) needed to produce such motions. Applications will emphasize elements of machine design. Prerequisites: PHYS 1050 (016.105) and ENG 1440 [COMP 1010 (or 074.101) or COMP 1012] and [MATH 1710 (136.171) or MATH 1700 (136.170)]. Not to be held for credit with MECH 2120 (or 025.212) or MECH 3480 (or 025.348).

**MECH 3492** Fluid Mechanics and Applications Cr.Hrs.4

The angular momentum principle, introduction to differential analysis of fluid motion, internal and external incompressible viscous flow, fluid machinery and multiple-path systems, fluid coupling and torque couplings and torque converters. Prerequisite: [PHYS 1050 (016.105), ENG 1440, (or ENG 1350 or 130.135), COMP 1010 (074.101)], and [(MATH 1710 or 136.171) or MATH 1700 (136.170)] and [MECH 2262 (MECH 2260 or 025.226)]. Not to be held for credit with MECH 3490 (or 025.349)

**MECH 3502** Stress Analysis and Design Cr.Hrs.4

Strength and stability of columns, torsion of thin-walled members, unsymmetric loading and shear centres, beam deflection and energy methods. Prerequisites: MECH 2222 (formerly MECH 2220 or 025.222), and MATH 2130 (formerly MATH 2110 or 136.211). Not to be held for credit with MECH 2220 (or 025.222) or MECH 3500 (or 025.350)

**MECH 3520** Aerodynamics Cr.Hrs.4

Aeronautical definitions, compressible flow, plane normal shock waves, Mach. no. and shock waves in two-dimensional flow, potential flow theory in two-dimensional and axisymmetric flows. Two-dimensional wing theory, finite wing theory panel methods, elements of boundary layer theory. Compressibility and wings, wing design, flow control. Not to be held for credit with the former 025.352. Prerequisite: MECH 3492 (MECH 3490 or 025.349).

**MECH 3542** Engineering Materials 2 Cr.Hrs.4

Mechanical properties of engineering non-metallic materials such as polymers, ceramics and composites, and their relationship to structure and processing; introduction to various shaping and joining processes used in manufacturing, their advantages and limitations; selection and application of engineering materials. Prerequisites: MECH 2272 (formerly MECH 2270 or 025.270). Not to be held for credit with MECH 2270 (or 025.227), MECH 2290



(or 025.229) or MECH 3540 (or 025.354)

**MECH 3550** Robotics and Computer Numerical Control Cr.Hrs.4

This course builds up a foundation in the area of Computer Aided Manufacturing (CAM) such as computer numerically controlled machine tools and robotics. Intense hands on experience are provided in the laboratory sessions on part programming using Computer aided design (CAD) packages and robots to demonstrate application in the area of CAM. Several case studies and manufacturing applications will be discussed. Not to be held with the former 025.484 or 025.355. Prerequisite: MECH 2012 (or MECH 2010 or CIVL 2830).

**MECH 3562** Introduction to Optimization Cr.Hrs.4

The objective of this course is to develop the ability to formulate and analyze problems that will be encountered in a manufacturing system. The skills acquired will allow the students to approach problems from an optimization perspective. The students will be provided experience in related software packages. Prerequisites: MECH 2012 (MECH 2010 or CIVL 2830), and STAT 2220 (005.222), and STAT 2220 (formerly 005.222). Not to be held with the former MECH 3560 (025.356 or 025.341).

**MECH 3570** Manufacturing Automation Cr.Hrs.4

(Formerly 025.357) This course builds upon the foundation developed in a previous course: namely Robotics and Computer Numerical Control. The course covers a wide variety of topics in the area of computer controlled automation. The students are provided with hands on experience in design for automation. It will synthesize several aspects associated with integrated operation of computer controlled automated devices. Prerequisite: MECH 3550 (or 025.355). (Not to be held with the former 025.485 or 025.357).

**MECH 3582** Manufacturing Planning and Quality Control Cr.Hrs.4

The course covers topics such as: Group technology, Just-in-Time, Computer aided process planning, Statistical Process Control and Manufacturing Planning and Control. Issues related to the integration of several areas that fall with CIM are emphasized. Systems approach is introduced. Prerequisites: MECH 2012 (or MECH 2010 or CIVL 2830). Not to be held for credit with MECH 3580 (025.358 or 025.485).

**MECH 3592** Simulation Modeling and Facility Planning Cr.Hrs.4

The objective of this course is to introduce simulation for manufacturing operations and the concepts of facilities location and layout. The students will learn how to program WITNESS, a simulation language, and through simulation, explore the effects of facility planning; resource availability e.g. machines and quality related problems on manufacturing productivity and timing. Not to be held for credit with MECH 3590 (or 025.359 or 025.471). Prerequisite: MECH 2012 (or MECH 2010 or CIVL 2830).

**MECH 3602** Manufacturing Process Fundamentals Cr.Hrs.4

This course will give students hands on experience with numerous manufacturing processes, machines and systems, by having them build a miniature Stirling engine, for example. Using CNC mills, lathes, conventional machine shop equipment and hand tools, the students will

manufacture engine components, assemble them and trouble shoot any problems. The object of the course is to provide Mechanical and Manufacturing students with hands-on exposure to the application of basic manufacturing process tools. The course will be offered in collaboration with the Mechanical and Manufacturing and Communication department, Red River College. Not to be held for credit with MECH 3600 (or 025.360). Prerequisite: MECH 2012 (or MECH 2010 or CIVL 2830).

**MECH 3910** Manufacturing Cooperative Education Assignment 1 Cr.Hrs.1

Special work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment, and in-depth presentation of related engineering problems. Not to be held for credit with 025.391. (Pass/Fail grade only).

**MECH 3920** Manufacturing Cooperative Education Assignment 2 Cr.Hrs.1

Special work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment, and in-depth presentation of related engineering problems. Not to be held for credit with the former 025.392. (Pass/Fail grade only). Prerequisite: MECH 3910 (or 025.391).

**MECH 3980** Mechanical Laboratory Cr.Hrs.4

Laboratory course on topics that compliment and reinforce concepts developed in second and third year mechanical engineering courses. Comprehensive experiments followed by submission of laboratory reports will be required. Prerequisites: ENG 2010 (or 130.201), and MECH 2262 (or MECH 2260 or 025.260), MECH 2202 (or MECH 2200 or 025.220) and MECH 2222 (or MECH 2220 or 025.222). Pre- or Co prerequisites: MECH 3420 (or 025.342) and MECH 3502 (or MECH 3500 or 025.350), and MECH 3542 (or MECH 3540 or 025.345). Not to be held for credit with MECH 4980 (or 025.498) and MECH 4990 (or 025.499).

## 4.11 Mechanical and Manufacturing Engineering -4000 Level

**MECH 4050** Mechanical Engineering Coop Education Assignment 3 Cr.Hrs.1

(Formerly 025.405) Special work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment, and in-depth presentation of related engineering problems. Not to be held for credit with the former 025.405. (Pass/Fail grade only). Prerequisite: MECH 3050 (or 025.305).

**MECH 4060** Mechanical Engineering Coop Education Assignment 4 Cr.Hrs.1

Special work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four month professional assignment, and in-depth presentation of related engineering problems. Not to be held for credit with the former 025.406. (Pass/Fail grade only). Prerequisite: MECH 4050 (or 025.405)

**MECH 4160** Graduation Thesis Cr.Hrs.3

(Formerly 025.416) Each graduating student must submit a satisfactory thesis on a subject which will be designated or approved by the head of the department. These are to be handed in to the Department of MEchanical and Industrial Engineering office by the designated deadline.

RESTRICTION: Only students with a year class distinction of 4 or higher in Mechanical or Manufacturing Engineering may register for this course. Not to be held for credit with the former 025.416. Prerequisite: ENG 2010 ( or 130.201) and eligible to graduate.

**MECH 4162** Thesis Cr.Hrs.6

Each graduating student must submit a satisfactory thesis on a subject which will be designated or approved by the head of the department. These are to be handed in to the Department of Mechanical and Manufacturing Engineering office by the designated deadline. RESTRICTION: Only students with a year class distinction of 4 or higher in Mechanical or Manufacturing Engineering may register for this course. Prerequisites: ENG 2010 (or 130.201) and eligible to graduate. Not to be held for credit with MECH 4160 (formerly 025.416)

**MECH 4180** Analysis and Design of Aerospace Structures Cr.Hrs.3

Methodology and techniques for design of aerospace structures and components to preclude failure with minimum weight, cost and resource consumption. Analysis of structural, air, gust and manoeuvre loads. Not to be held with the former 025.418. Prerequisite: MECH 3500 (or 025.350).

**MECH 4182** Aerospace Structures: Analysis and Design Cr.Hrs.4

Methodology and techniques for design of aerospace structures and components to preclude failure with minimum weight, cost and resource consumption. Analysis of structural, air, gust and manoeuvre loads. Prerequisites: MECH 3502 (or MECH 3500 or 025.350). Not to be held for credit with MECH 4180 (or 025.418).

**MECH 4190** Aerospace Materials and Advanced Manufacturing Processes Cr.Hrs.3

Properties of aerospace structural materials including glass and graphite fibre composites, light metal alloys and high strength steels. Properties of high temperature materials; superalloys, ceramics, intermetallic compounds, metal matrix composites. Specialized methods for manufacture of these materials. Not to be held for credit with the former 025.419. Prerequisite: MECH 3540 (or 025.354).

**MECH 4192** Aerospace Materials and Manufacturing Processes Cr.Hrs.4

Properties of aerospace structural materials including glass and graphite fibre composites, light metal alloys and high strength steels. Properties of high temperature materials; superalloys ceramics, intermetallic compounds, metal matrix composites. Specialized methods for manufacture of these materials. Prerequisites: MECH 3542 (formerly MECH 3540 or 025.354). Not to be held for credit with MECH 4190 or the former 025.419.

**MECH 4200** Gas Turbine Propulsion Systems Cr.Hrs.4

(Formerly 025.420) Gas turbine systems, shaft power cycles, gas turbine propulsion cycles, centrifugal compressors, axial flow compressors, combustion systems, design performance predictions, off-design operations and transient behaviour of

gas turbines. Design performance predictions. Not to be held for credit with the former 025.420. Prerequisites: MECH 2202 (or MECH 2200 or 025.220) and MECH 3520 (or 025.352)

**MECH 4290** Internal Combustion Engines Cr.Hrs.3

Thermodynamics of internal combustion engine cycles; fuels and lubricants; supercharging; carburetion; valving; manifolding; combustion chamber ignition and fuel injection; engine performance and testing; free piston engines. Not to be held for credit with the former 025.429. Prerequisite: MECH 2200 (or 025.220).

**MECH 4292** IC Engines Cr.Hrs.4

(Formerly MECH 4290 or 025.429) Thermodynamics of internal combustion engine cycles; fuels and lubricants; supercharging; carburetion; valving; manifolding; combustion chamber ignition and fuel injection; engine performance and testing; free piston engines. Prerequisite: MECH 2202 (formerly MECH 2200 or 025.220). Not to be held for credit with MECH 4290 or 025.429

**MECH 4310** Contemporary Topics in Mechanical Engineering 1 Cr.Hrs.4

This course will cover contemporary topics in Mechanical Engineering. The specific topics and a detailed outline will be available at the time of registration prior to the start of the registration period for the session in which the course will be offered. Prerequisite: Permission of the department.

**MECH 4322** Contemporary Topics in Mechanical Engineering II Cr.Hrs.4

This course will cover contemporary topics in Mechanical Engineering. The specific topics and a detailed outline will be available at the time of registration prior to the start of the registration period for the session in which the course will be offered. Prerequisite: Departmental Permission. Not to be held for credit with MECH 4320

**MECH 4330** Contemporary Topics in Manufacturing Engineering 1 Cr.Hrs.4

This course will cover contemporary topics in Manufacturing Engineering. The specific topics and a detailed outline will be available at the time of registration prior to the start of the registration period for the session in which the course will be offered. Prerequisite: Permission of the department.

**MECH 4342** Contemporary Topics in Manufacturing Engineering II Cr.Hrs.4

This course will cover contemporary topics in Manufacturing Engineering. The specific topics and a detailed outline will be available at the time of registration prior to the start of the registration period for the session in which the course will be offered. Prerequisite: Departmental Permission. Not to be held for credit with MECH 4340

**MECH 4350** Topics in Engineering Material 1 Cr.Hrs.4

This course will cover contemporary topics in engineering materials. The specific topics and a detailed outline will be available prior to the start of registration period for the session in which the course will be offered. Prerequisite: Departmental Permission.

**MECH 4360** Topics in Engineering Materials 2 Cr.Hrs.4

This course will cover contemporary topics in engineering materials. The specific topics and a detailed outline will be



available prior to the start of registration period for the session in which the course will be offered. Prerequisite: Departmental Permission.

**MECH 4410** Air Conditioning Cr.Hrs.3  
Psychometric processes, equipment selection, and the design of heating and cooling systems for typical buildings. Prerequisite: MECH 2200.

**MECH 4412** Heating, Ventilation and Air Conditioning Cr.Hrs.4  
Psychometric processes, equipment selection, and the design of heating and cooling systems for typical buildings. Prerequisite: MECH 2202 (formerly MECH 2200 or 025.220). Not to be held for credit with MECH 4410 or the former 025.441.

**MECH 4452** Aircraft Performance, Dynamics and Design Cr.Hrs.4  
A study of the morphology of aerospace vehicles; basic components and their functions, Aircraft performance; drag, thrust, lift, basics of orbital mechanics. Prerequisites: MECH 3520 (or 025.352). Not to be held for credit with MECH 4450 or the former 025.445.

**MECH 4472** Mechanical Vibration Cr.Hrs.4  
Nonlinear Vibrations: mathematical theory for lumped vibratory systems; response of systems to nonharmonic excitation; solutions by Laplace transforms and Fourier analysis; introduction to the matrix formulation of vibration problems and vibration of distributed systems. Prerequisite: MECH 3420. May not be held for credit with 025.447.

**MECH 4510** Fundamentals of Finite Element Analysis Cr.Hrs.4  
Fundamentals of the Finite Element Method, basic components in a Finite Element procedure, application of FEM to solve engineering problems and use of commercial software. Prerequisites: MATH 2120 (formerly 136.212) and (MATH 3132 or MATH 3100 (formerly 136.310) and MECH 2222 (formerly MECH 2220 or 025.222).

**MECH 4532** Advanced Strength of Materials Cr.Hrs.4  
Stress and strain in three dimensions; thick walled cylinders, beams of elastic foundations, unsymmetrical bending and sheet-stringer construction, curved beams. Additional topics such as the analysis of fibre-composite material, techniques in experimental stress analysis and studies in metallics fatigue may be presented prerequisite: MECH 3502 (formerly MECH 3500 or 025.350). Not to be held for credit with MECH 4530 or 025.453.

**MECH 4550** Noise Control Cr.Hrs.4  
An elective course open to all branches of Engineering; a recommended course for students taking Air Conditioning. Wave propagation, transducers and measurement techniques, psycho-acoustic criteria, legislation, techniques of noise and vibration control. Not to be held for credit with the former 025.455.

**MECH 4560** Selected Topics in Fluid Mechanics 4M Cr.Hrs.4  
Topics may include: wind tunnel design; experimental techniques; some exact solutions of the conservation equations; fundamentals of turbulence; secondary flows; fluidization; elementary meteorology; fluidics; other topics of current interest. Prerequisites: MATH 3132 (or MATH 3100

or 136.310), and MECH 3490 (025.349). Not to be held with the former 006.360.

**MECH 4620** Corrosion of Metals and Alloys Cr.Hrs.4 (Formerly 025.462) Electrochemical basis of corrosion, corrosion prevention by cathodic protection, inhibitors, alloying and heat treatment, passivation, stress corrosion cracking, corrosion fatigue; ionic and electronic conduction; oxidation of metals and alloys. Not to be held for credit with the former 025.462. Prerequisite: MECH 3542 (or MECH 3540 or 025.354)

**MECH 4650** Machine Design 4M Cr.Hrs.4 (Formerly 025.465) Stress analysis and the design of various machine elements; shafts and couplings, springs, threaded fasteners and power screws, clutches and power transmission components; spur, bevel, worm and helical gears; lubrication, journal and roller bearings. Not to be held for credit with the former 025.465. Prerequisites: MECH 3482 (or MECH 212 or 025.212) and MECH 3502 (or MECH 3500 or 025.350).

**MECH 4672** Advanced Mechanism Design Cr.Hrs.4  
Graphical, analytical and computer techniques for the analysis and design of mechanisms to produce a desired set of motion characteristics; design of linkages, double lever, slider and dwell mechanism; cognate linkages. Kinetic synthesis tasks function generation, path generation and motion generation. Prerequisite: MECH 3482 (formerly MECH 2120 or 025.212). Not to be held for credit with MECH 4670 or the former 025.467.

**MECH 4680** Energy Conservation and Utilization Cr.Hrs.4  
Energy supply and demand, advanced thermodynamic cycles, conventional energy sources, alternative energy, conservation of energy, environmental considerations. Not to be held for credit with the former 025.468. Prerequisite: MECH 2202 (formerly MECH 2200 or 025.220)

**MECH 4690** Topics in Heat Transfer and Energy Cr.Hrs.3  
Some combination of the following advanced topics: conduction heat transfer, radiation, heat-exchanger design, two-phase phenomena, fluidization, alternative energy, energy conservation. Other topics of current interest may also be included. Not to be held for credit with the former 025.469. Prerequisite: MECH 3460 (or MECH 3470) (or 025.347).

**MECH 4692** Renewable Energy Cr.Hrs.4  
Introduction to renewable energy systems, current and future global energy issues and the need for renewable energy applications, and distributed renewable energy generation. Renewable energy systems that will be considered are; solar heat, solar PV, biomass heat and power, hydro power, and wind power. Students will develop simple numerical models of renewable energy systems. Prerequisites MECH 2202 (formerly MECH 2200 or 025.220) and MECH 2262 (formerly MECH 2260 or 025.226). Pre- or Co requisite; MECH 3460 (formerly MECH 3470 or 025.347)

**MECH 4694** Advanced Topics in Heat Transfer Cr.Hrs.4  
Some combination of the following advanced topics; conduction heat transfer radiation, heat-exchanger design, two-phase phenomena, fluidization, alternative energy, energy conservation. Other topics of current interest may also be included. Prerequisite: MECH 3460 (or MECH 3470 or 025.347). Not to be held for credit with MECH 4690 or the



former 025.469.

**MECH 4702** Design of Thermal Systems Cr.Hrs.4  
Modeling of thermal systems; system simulation; design applications of optimization methods: Lagrange multipliers, search methods, and dynamic geometric and linear programming. Prerequisite: MECH 2202 (or MECH 2200 or 025.220). Not to be held for credit with MECH 4700 or the former 025.470.

**MECH 4812** Automotive Engineering Cr.Hrs.4  
Introduction to the design of passive suspension systems; control of active suspension systems; tire dynamics; ergonomics, safety and crash dynamics; automotive lighting and digital display trains. Prerequisite: MECH 3502 (formerly MECH 3500 or 025.350). Pre or Corequisite: MECH 3420 (or 025.342). Not to be held for credit with MECH 4810 or the former 025.481.

**MECH 4822** Numerical Heat Transfer in Fluid Flow Cr.Hrs.4  
General conservation equations; specific forms of the conservation equations and energy equations; finite difference methods; one dimensional steady problems' one dimensional unsteady problems' two dimensional steady problems; two dimensional; unsteady problems; convection, solution for the flow field. Prerequisite: MATH 3132 (or MATH 3100) (or 136.310), MATH 2120 (or 136.212), MECH 3460 (or MECH 3470 or 025.347) and MECH 3492 (or MECH 3490 or 025.349). Not to be held for credit with MECH 4820 or the former 025.482.

**MECH 4860** Engineering Design Cr.Hrs.5  
Design projects; teams of students prepare written and oral design reports on solutions to specific problems from Manitoba industries; series of seminars by invited speakers. Prerequisite: eligibility for graduation in the current academic year or registered in third year Industrial Cooperative Education Program. Not to be held with the former 024.101 or 025.486. Prerequisite: ENG 2010 (or 130.201).

**MECH 4870** Fracture and Failure of Engineering Materials Cr.Hrs.4  
Criteria for crack initiation and propagation leading to structural failure. Fracture mechanics and fracture toughness phenomena. Effects of structure geometry, loading rate, environment, temperature, composition and microstructure on material integrity. Not to be held with the former 025.487. Prerequisite: MECH 3542 (or MECH 3540 or 025.354).

**MECH 4900** Mechatronics System Design Cr.Hrs.4  
The course covers topics in the analysis of control systems and components with the goal to provide students with tools and an understanding of issues related to integrating mechanical, electronic and software components towards building mechatronic devices. Hands-on-experience is provided in the laboratory sessions on simulation and actual computer control of various devices. Problems considered would include application to fluid power systems, systems integration and validation. The focus is placed on learning to work with real hardware. Not to be held for credit with the former 025.490. Prerequisite: MECH 3430 (or 025.343)

**MECH 4910** Manufacturing Co-operative Education Assignment 3 Cr.Hrs.1  
Special work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed

during the four-month professional assignment, and in-depth presentation of related engineering problems. Not to be held for credit with the former 025.491. (Pass/Fail grade only.) Prerequisite: MECH 3920 (or 025.392).

**MECH 4920** Manufacturing Co-operative Education Assignment 4 Cr.Hrs.1  
Special work assignment in business, industry, or government for cooperative education students. Requires submission of a written report covering the work completed during the four-month professional assignment, and in-depth presentation of related engineering problems. Not to be held for credit with the former 025.492. (Pass/Fail grade only.) Prerequisite: MECH 4910 (or 025.491)

**MECH 4930** Mechanical Engineering Industry Internship (IIP) Cr.Hrs.0  
Supervised work experience normally of 12-16 months duration, concluded by a work report. Not to be held for credit with the former 025.493. (Pass/Fail grade only.)

**MECH 4960** Manufacturing Process 1 Cr.Hrs.4  
This course will introduce additional or expanded versions of topics introduced in MECH 2290 (or 025.229), "Manufacturing Engineering". Topics will be selected from relationship of manufacturing, material selection to design, process improvement techniques; casting of metals and polymers; machining and cutting; polymers and composites; processing of powders, ceramics and glasses. Not to be held for credit with the former 025.496. Prerequisite: MECH 3542 (or MECH 2290 or 025.229).

**MECH 4970** Manufacturing Process 2 Cr.Hrs.4  
This course will introduce additional or expanded versions of topics introduced in MECH 4960 (or 025.496), "Manufacturing Process 1", and building on course material from MECH 2290 (or 025.229). Topics will be selected from forming or metals; joining processes; rapid manufacturing; micro-electronics processing; surface engineering and finishing systems. Laboratory experience will be obtained on casting and rolling of metals and comparison of mechanical properties of the two routes. Not to be held for credit with the former 025.497. Prerequisite: MECH 4960 (or 025.496).

**MECH 4980** Mechanical Engineering Laboratory Cr.Hrs.2 (Formerly 025.498) Advanced laboratory course on topics covering different disciplines within mechanical engineering. Comprehensive experiments followed by submission of laboratory reports will be required. One lecture/week will be provided on issues related to experimental techniques. Prerequisites: MECH 3502 (or MECH 3500 or 025.350) and MECH 3420 (or 025.342). Not to be held with the former 024.101 or 025.498.

**MECH 4990** Mechanical Engineering Laboratory 2 Cr.Hrs.2 (Formerly 025.499) Advanced laboratory course on topics covering different disciplines within mechanical engineering. Comprehensive experiments followed by submission of laboratory reports will be required. One lecture/week will be provided on issues related to experimental techniques. Prerequisite: MECH 2202 (or MECH 2200 or 025.220). Pre or Corequisite: MECH 3460 (or MECH 3470 or 025.347)



## 4.12 Internationally Educated Engineers Qualification Program (IEEQ) – Post-Baccalaureate Diploma in Engineering

**General Office:** E3-573 EITC  
**Telephone:** (204) 474 8961  
**Fax:** (204) 474 7312  
**E-mail:** [ieeq@umanitoba.ca](mailto:ieeq@umanitoba.ca)  
**Web:** [umanitoba.ca/engineering/ieeq](http://umanitoba.ca/engineering/ieeq)

### 4.12.1 Introduction

The Faculty of Engineering offers the IEEQ Program, designed for international engineering graduates (IEGs) pursuing foreign credentials recognition with the Association of Professional Engineers and Geoscientists of Manitoba (APEGM, [www.apegm.mb.ca](http://www.apegm.mb.ca)), the regulatory body for engineering in Manitoba. Through the IEEQ Program, IEGs

-Meet requirements for academic qualification with APEGM and, upon successful completion of IEEQ program requirements, become registered with APEGM as a Member-in-Training; and,

- Earn a Post-Baccalaureate Diploma in Engineering from the University of Manitoba.

The provisions of Section 3: Academic Regulations apply to all students. In addition, the IEEQ Program has regulations and requirements that apply specifically to its students that may differ from the academic regulations in Section 3. Details on regulations and requirements not included below are provided to students upon their admission into the IEEQ program, and can be found on-line at [umanitoba.ca/engineering/ieeq](http://umanitoba.ca/engineering/ieeq)

### 4.12.2 Admission Requirements and Application Procedures

The IEEQ Program can accept applicants whose Confirmatory Exam assignments by APEGM correspond to one of the six accredited undergraduate engineering programs offered in the Faculty of Engineering.

The total number of courses required in the IEEQ Program is generally as shown in the table below:

Number of Technical Confirmatory Exams <sup>1</sup> Assigned by APEGM	Number of courses in IEEQ <sup>2</sup>
One (1) or two (2)	5
Three (3)	7
Four (4)	9
Five (5)	11

Notes: 1. Technical exams refer to exams assigned from Group A or Group B of the Discipline Examinations (see [http://engineerscanada.ca/e/pu\\_syllabus\\_1.cfm](http://engineerscanada.ca/e/pu_syllabus_1.cfm)). Technical Exams do not include exams assigned from the Basic Studies (BS) or Complementary Studies (CS) syllabi, such as 98-CS-1 Engineering Economics.

2. Including CIVL 4050 *Engineering Economics*, ENG 4010 *Practicing Professional Engineering in Manitoba*, and ENG 4012 *IEEQ Co-op Assignment*

Program entrance is normally in September of any given year. In order to be admitted to the IEEQ Program, the student must:

- Be an IEG with an earned undergraduate engineering degree obtained from a university outside of Canada;

- Have obtained the results of an *Assessment of Academic Credentials* from APEGM, with a result of five or fewer Confirmatory Exams assigned by APEGM in order to be considered academically qualified;

- Be a Permanent Resident or Canadian Citizen; and,

- Demonstrate English language proficiency at benchmark level 8 on the Canadian Language Benchmarks.

Application forms are available through the IEEQ office (telephone 204.474.8961 or email [ieeq@UManitoba.ca](mailto:ieeq@UManitoba.ca)) or on-line at [umanitoba.ca/engineering/ieeq](http://umanitoba.ca/engineering/ieeq).

### 4.12.3 Program Requirements

The Post-Baccalaureate Diploma in Engineering consists of a minimum of 24 hours of coursework, subject to the following regulations:

CIVL 4050 *Engineering Economics*; and

ENG 4010 *Practicing Professional Engineering in Manitoba*; and

ENG 4012 *IEEQ Co-op Assignment*; and

Technical courses taken from the 3000 and 4000 level of the student's engineering discipline, and corresponding to the topic areas of Confirmatory Exams assigned by APEGM.



If the courses required in IEEQ total less than 24 credit hours, the student may apply for a transfer of credit from the original earned undergraduate engineering degree (obtained outside of Canada). All courses must be completed with a grade of C or better. Failed courses may only be repeated once, and are subject to the limits outlined in the IEEQ Student Handbook and on the IEEQ website.

**4.12.4 Maximum Time Limits**

Students can choose a full-time or part-time option in the IEEQ Program. Students will be asked to declare their status upon their acceptance to the IEEQ Program.

Number of courses in IEEQ	Full-time	Part-time
Seven (7) or fewer	1 yrs	2 yrs
More than seven (7)	2 yrs	3 yrs



## Clayton H. Riddell Faculty of Environment, Earth, and Resources

**Dean:** Norman Halden

**Associate Dean(s):** Mary Benbow (Academic), David Barber (Research)

**Campus Address/General Office:** 440 Wallace Building

**Telephone:** (204) 474-7252

**Fax:** (204) 275-3147

**Email Address:** [Faculty\\_Environment@umanitoba.ca](mailto:Faculty_Environment@umanitoba.ca)

**Website:** [umanitoba.ca/environment](http://umanitoba.ca/environment)

**Academic Staff:** Please refer to Clayton H. Riddell Faculty of Environment, Earth, and Resources website [umanitoba.ca/environment](http://umanitoba.ca/environment)

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## SECTION 1: Degree Programs Offered

The Clayton H. Riddell Faculty of Environment, Earth, and Resources offers degree programs in Environmental Science, Environmental Studies, Geography, Physical Geography, Geological Sciences, Geology and Geophysics. All students are advised to examine their interests and future goals carefully to make appropriate program choices. Consultation with [Riddell Faculty student advisors](#) and/or department representatives is strongly encouraged.

### 1.1. Programs,

Degree	Years to complete <sup>3</sup>	Total Credit Hours <sup>3</sup>
Geography		
<a href="#">Bachelor of Arts in Geography (General)</a>	3	90
<a href="#">Bachelor of Arts in Geography (Advanced)</a> <sup>1</sup>	4	120
<a href="#">Bachelor of Arts in Geography (Honours)</a> <sup>1</sup>	4	120
Physical Geography		
<a href="#">Bachelor of Science in Physical Geography (Major, Major Co-op)</a> <sup>1</sup>	4	120
<a href="#">Bachelor of Science in Physical Geography (Honours, Honours Co-op)</a> <sup>1</sup>	4	120
Environmental Science		
<a href="#">Bachelor of Environmental Science (General)</a> <sup>1</sup>	3	90
<a href="#">Bachelor of Environmental Science (Major, Major Co-op)</a> <sup>1</sup>	4	120
<a href="#">Bachelor of Environmental Science (Honours, Honours Co-op)</a> <sup>1</sup>	4	120
Environmental Studies		
<a href="#">Bachelor of Environmental Studies (General)</a> <sup>1</sup>	3	90
<a href="#">Bachelor of Environmental Studies (Major, Major Co-op)</a> <sup>1</sup>	4	120
<a href="#">Bachelor of Environmental Studies (Honours, Honours Co-op)</a> <sup>1</sup>	4	120
Geological Sciences		
<a href="#">Bachelor of Science in Geological Sciences (General)</a> <sup>1</sup>	3	90
Geology		
<a href="#">Bachelor of Science in Geological Sciences – Geology (Major)</a> <sup>1</sup>	4	120
<a href="#">Bachelor of Science in Geological Sciences – Geology (Honours)</a> <sup>2</sup>	4	120
Geophysics		
<a href="#">Bachelor of Science in Geological Sciences – Geophysics (Major)</a> <sup>1</sup>	4	121
<a href="#">Bachelor of Science in Geological Sciences – Geophysics (Honours)</a> <sup>2</sup>	4	121

#### Footnotes:

<sup>1</sup>There is no time limit to complete the degree.

<sup>2</sup>There is an eight-year time limit to complete the degree.

<sup>3</sup>This includes one year (30 credit hours) of study in University 1.

### 1.2 Available Majors, Minors, Focus Areas, Streams and Option,

**Available Majors:** Environmental Science, Environmental Studies, Geography, Geological Sciences, Geology, Geophysics, and Physical Geography.

**Available Minors:** Environmental Science, Environmental Studies, Geography, Geological Sciences and Physical Geography.

**Focus Areas** (Environmental Studies and Environmental Science): Conservation & Biodiversity, Environmental

Assessment, Environmental Chemistry & Biogeochemistry, Environmental Health, Environmental Toxicology, Land Systems, Natural Resource Management, Northern Studies, Policy & Law, Stewardship, Sustainable Building, Sustainable Development, Water Resources, Wildlife Management, and Individualized Study.

**Streams** (Physical Geography): Atmosphere and Hydrological Sciences, General Physical Geography and Geomatics.



**Canadian Studies** GEOG 2900, GEOG 2570, GEOG 3480 and GEOG 3900 may be used in combination with the BA Honours, BA Advanced, and Minor programs.

## SECTION 2: Admission to the Clayton H. Riddell Faculty of Environment, Earth, and Resources

### 2.1 Admission,

Effective for September 2013, the Clayton H. Riddell Faculty of Environment, Earth, and Resources will offer two entry options: Direct entry from high school OR Advanced Entry (transfer from University 1).

#### Direct Entry:

Direct entry from high school will require Manitoba high school graduation, with 5 full credits at the Grade 12 level with a minimum 85% average (and a 60% minimum) in English 40S, Mathematics 40S (Pre-calculus or Applied), and one of Social Studies 40S, Biology 40S, Chemistry 40S, Physics 40S or one "Designated Course 40S" including Economics, Law, Psychology and Current Topics in First Nations, Métis and Inuit (FNMI) Studies

#### From University 1:

Most students who have completed less than 24 credit hours at another post-secondary institution will complete the first year of their degree program in University 1. In University 1, students will select courses from a wide variety of offerings in Faculties across campus. For information about [University 1](#), see the [Chapter on University 1](#) in this [Calendar](#).

University 1 students are encouraged to apply for admission to a degree program in the Clayton H. Riddell Faculty of Environment, Earth, and Resources once they have completed 24 credit hours of course work and have met the minimum entrance requirements of their intended degree program. **Students must apply to be considered eligible for admission to the Riddell Faculty. Application information is available from the Admissions Office, Enrolment Services, 424 University Centre. This information is also available in the Riddell Faculty general office, 440 Wallace Building, and is posted on the University's website ([umanitoba.ca/admissions](http://umanitoba.ca/admissions)). [Click to apply for Admission.](#)**

Faculty admission is determined on the basis of a 2.00 Grade Point Average on a minimum of 24 credit hours of course work from a recognized institution. Note: For students completing the Bachelor of Arts in Geography, entry is based on a [Degree Standards Table](#).

Degree programs may define additional entrance requirements and students are referred to the appropriate section of this *Chapter* for further details as follows:

**Section 5:** [Bachelor of Arts in Geography Degree Regulations and Program Description.](#)

**Section 6:** [Bachelor of Science in Physical Geography Degree Regulations and Program Description.](#)

**Section 7:** [Bachelor of Environmental Science and Bachelor of Environmental Studies Degree Regulations and Program Descriptions.](#)

**Section 8:** [Department of Geological Sciences: Bachelor of Science in Geological Sciences - Geology, Geophysics, and General Degree Regulations and Program Descriptions.](#)

### 2.2 Transfer Students,

Students applying for admission from other recognized universities or colleges are called 'transfer students'. For the University of Manitoba's general policy on transfer of credit and advanced standing, refer to the Admissions website: [umanitoba.ca/admissions](http://umanitoba.ca/admissions).

To be eligible for admission to the Clayton H. Riddell Faculty of Environment, Earth, and Resources, transfer students must have completed no fewer than 24 credit hours of university level course work and satisfied the minimum performance requirements of the intended degree program. Transfer students who have completed less than 24 credit hours must register in [University 1](#) or [Extended Education](#) to complete the required credit hours of course work. Students with more than 24 credit hours who are not admissible to the Riddell Faculty should consider applying to [Extended Education](#) as their alternative choice.

Students on academic suspension as a result of work completed at another post-secondary institution or another Faculty will not normally be considered for admission to the Clayton H. Riddell Faculty of Environment, Earth, and Resources until the suspension has been served.

#### Transfer of Credit

The University of Manitoba assesses transfer credit as a part of the application process. Assessment of prior course work for admissions or transfer credit will only take place after your application has been submitted. The University of Manitoba [transfer credit equivalencies database](#) is now available as a reference tool to look up current course assessments. Please take note of the guidelines outlined on the database access page as these course assessments are subject to change.

See the [Admissions section of this Calendar](#). Courses completed at an external institution ten years prior to registration in the Clayton H. Riddell Faculty of Environment, Earth, and Resources are not considered for transfer of credit. Students should contact a [Riddell Faculty student advisor](#) regarding transfer credit.

### 2.3 Visiting Students,



Visiting students may apply for admission to the Clayton H. Riddell Faculty of Environment, Earth, and Resources on the basis of a [Letter of Permission](#) from the Registrar or appropriate Dean of her/his home institution. Certain restrictions may be placed on the kind and number of courses in which a student will be allowed to register. Visiting students may wish to contact a [Riddell Faculty student advisor](#) in the Faculty general office for further information.

#### 2.4 Second Degree Students,

Students possessing a first degree from a recognized university program with a minimum Cumulative Grade Point Average of 2.00 on their first degree may be eligible for admission as a Second Degree student provided they have completed the minimum coursework entrance requirements for their intended degree program.

Second Degree requirements may be shortened by up to 60 credit hours and, once admitted, students will be expected to satisfy all continuation and graduation requirements in the degree program. Second Degree students are not required to satisfy the University Written English and Mathematics requirement. See a [Riddell Faculty student advisor](#) for specific information on degree requirements following completion of the first degree.

#### 2.5 Special Students, After Degree Special Student

Students who have successfully completed a first degree from a recognized university program with a cumulative Grade Point Average of 2.00 or better are eligible for admission as Special Students.

#### 2.6 Auditing Students,

Students who wish to audit courses must have written permission from the instructor of the desired course before they can register. Auditing students must register in-person in the Riddell Faculty general office. The Clayton H. Riddell Faculty of Environment, Earth, and Resources prohibits auditors from registering in courses until after the initial access period.

### SECTION 3: Degree Regulations and Services Applicable to all Programs in the Clayton H. Riddell Faculty of Environment, Earth, and Resources

#### 3.1 Courses Offered in Other Faculties and Schools Acceptable for Credit in the Clayton H. Riddell Faculty of Environment, Earth, and Resources,

Students who are registered in the Clayton H. Riddell Faculty of Environment, Earth, and Resources may take any course offered by another faculty or school for credit towards their degree, subject to permission from the department head (or designate) and/or a [Riddell Faculty student advisor](#).

#### 3.2 Available Minors in Departments and Faculties,

Students in the Bachelor of Environmental Science, Bachelor of Environmental Studies, Bachelor of Science in Geological Sciences (Geology and Geophysics) and Bachelor of Science in Physical Geography degree programs may, if they wish, declare and complete a Minor from departments and interdisciplinary programs in which a Minor is offered. Students registered in the B.A. Geography (General; Advanced) and B.Sc. Geological Sciences (General) are required to complete a Minor prior to graduation. Students may not, however, declare both their Major and Minor from the same subject area. For example: a student in B.A. Geography program may not declare a minor in physical geography; a student in Environmental Science program may not declare a minor in Environmental Studies, etc.. Students can declare only one minor. For specific requirements to complete a Minor, please refer to the relevant Faculty/School's chapter in the [Academic Calendar & Catalog](#).

It should be noted that for Honours students any consideration of completing a Minor should be made early due to restricted opportunities in later years in their programs. **Students in the B.A. Geography (Honours) may not declare a Minor.**

A Minor will normally consist of at least 18 credit hours, with a minimum of 12 credit hours being at the 2000-, 3000-, and 4000-levels (although there are some exceptions). It should be noted that no course can be used as part of a prescribed Honours or Major program and also be part of a prescribed Minor. An alternate course will have to be selected to satisfy the Minor requirement. For example: if a course in Economics is part of the student's Major or Honours program in B.Env.Sc., then that course may not be used as part of a Minor in Economics.

Students planning to enrol in the I.H. Asper School of Business [Management Minor] must consult a [Riddell Faculty student advisor](#) as enrolment in this minor program is limited. *The Management minor consists of any 18 credit hours in courses offered by the Asper School of Business.*

#### 3.3 University Written English and Mathematics Requirement,

Students are required to complete the University Written English and Mathematics requirement as outlined in the [General Academic Regulations, Section 2: Residence and Written English and Mathematics Requirements](#) in this *Calendar*. It is recommended that students complete these requirements while in University 1 or in Year 2 of their program.

A list of all courses that satisfy the Written English and Mathematics requirements can be found in [Section 2.3 Approved English and Mathematics Courses](#) of this *Calendar*. Course numbers of designated written English courses are marked with a 'W' and designated Mathematics courses are marked with an 'M'.

Students may wish to consider *GEOL 1410W Natural Disasters and Global Change (3)*, *GEOG 2900W Geography*



of Canadian Prairie Landscapes (3), GEOL 3130W *Communication Methods in the Geological Sciences* (3), GEOG 3480W *Canadian Problems* (3), GEOG 3580W *Landforms* (6), GEOG 3900W *Geography of Manitoba* (3), and/or GEOG 3810M *Quantitative Research Methods in Geography* (3) to satisfy these requirements. In addition, the Department of Environment and Geography offers several courses annually through Distance Education that satisfy the 'W' requirement.

### 3.4 University 1 Requirements of Faculty of Arts and Faculty of Science Courses,

Students are required to take 6 credit hours from the Faculty of Arts, 6 credit hours from the Faculty of Science. See the [Chapter University 1](#) for further details.

For course subjects taught by the [Faculty of Science refer to the Chapter Faculty of Science](#) for a complete listing.

For course subjects taught by the [Faculty of Arts refer to the Chapter Faculty of Arts](#) for a complete listing.

### 3.5 Changes in Program Requirements,

Once students have successfully completed any portion of a degree program, they will not be required to meet new course requirements subsequently stipulated for that portion of the program, whether the requirements be for the Faculty or for an individual degree program. Students are required to complete their program in its entirety as outlined in the Calendar effective upon the point of admission to the Faculty and program.

### 3.6 Prerequisite and Corequisite Courses ,

Definitions for prerequisite and corequisite courses are outlined in the [Chapter, General Academic Regulations, Section 3: Course Identification](#) of this *Calendar*.

### 3.7 Course Availability,

All courses listed in this *Calendar* are not offered every year. The course(s) offered for the current academic term are published in the [Class Schedule](#).

The Department of Environment and Geography offers numerous courses under the following course numbers: GEOG 3770 *Special Topics in Geography* (3), GEOG 4670 *Selected Issues* (3), GEOG 3740 *Field Studies in Geography* (6), GEOG 3750 *Field Studies in Geography* (3), GEOG 3760 *Special Topics in Geography* (6), ENVR 2010 *Field Topics in Environment* (1.5), ENVR 2020 *Extended Field Topics in Environment* (3), ENVR 3000 *Multidisciplinary Topics in Environmental Science* (3), ENVR 3010 *Field Topics in Environmental Science* 1 (1.5), ENVR 3020 *Extended Field Topics in Environmental Science* 1 (3), ENVR 4000 *Multidisciplinary Topics in Environmental Science* (3), ENVR 4010 *Field Topics in Environmental Science* 2 (1.5), and ENVR 4020 *Extended Field Topics in Environmental Science* 2 (3).

The Department of Geological Sciences offers a course under the following course number: GEOL 4270 *Advanced*

*Studies in Earth Sciences* (3). Students are referred to the [Class Schedule](#) for current information.

### 3.8 Repeated Courses and Attempted Credit Hours,

Clayton H. Riddell Faculty of Environment, Earth, and Resources students are subject to the University of Manitoba regulations (see [General Academic Regulations, Section 5.1.3: Repeating a Course](#) as described in this *Calendar*) and the Riddell Faculty degree regulations regarding eligibility to repeat a course. Repeating a course will not result in the removal of the first attempt and grade in that course from the student's record. The course will appear on the transcript as many times as it has been repeated. Only the grade from the last attempt will be included in the calculation of the cumulative and degree Grade Point Average, unless otherwise stipulated by the degree program.

Students who wish to repeat a course must contact a [Riddell Faculty student advisor](#) for approval prior to registration and complete the [Request to Repeat a Course](#) form available on the Riddell Faculty web page ([umanitoba.ca/environment/undergraduate](http://umanitoba.ca/environment/undergraduate)).

There is no limit to the number of credit hours permitted in the degree programs in the Faculty provided a student does not exceed the credit hour limit of failed courses stated for specific programs.

### 3.9 Voluntary Withdrawals,

The responsibility for initiating withdrawals rests solely with the student. When eligible to do so, Voluntary Withdrawals must be done through Aurora Student. No withdrawals will be permitted after the deadlines posted in the [Academic Schedule](#).

There is no limit on the number of Voluntary Withdrawal hours a student can accumulate.

### 3.10 Authorized Withdrawals,

Students who have valid and documented reasons for withdrawal, such as medical illness or compassionate circumstances, may be authorized to withdraw without penalty. Requests for authorized withdrawals must be submitted in writing to a [Riddell Faculty student advisor](#). The Office of Student Advocacy located at 519 University Centre (474-7423, [student\\_advocacy@umanitoba.ca](mailto:student_advocacy@umanitoba.ca)) is available to provide information and assistance.

### 3.11 Residence Requirement ,

Students are required to complete a minimum number of credit hours at the University of Manitoba. Students should refer to their degree program in the appropriate section for further information:

[5: Bachelor of Arts in Geography Degree Regulations and Program Description and Courses Offered by](#)



[6: Bachelor of Science in Physical Geography Degree Regulations and Program Description and Courses Offered by](#)

[7: Bachelor of Environmental Science and Bachelor of Environmental Studies Degree Regulations and Program Descriptions and Courses Offered by](#)

[8: Department of Geological Sciences: Bachelor of Science in Geological Sciences - Geology, Geophysics, and General Degree Regulations and Program Descriptions and Courses Offered by](#)

The courses used to satisfy the residence requirement must be acceptable for credit by the degree program in the Clayton H. Riddell Faculty of Environment, Earth, and Resources. Residence requirements apply to both first and second degree students.

### 3.12 Letter of Permission to Take Courses at Another University,

Students wishing to complete courses at another institution for credit at this university must obtain written permission ([Letter of Permission](#)) from the Registrar's Office prior to registering at the other institution or no credit will be permitted. Any earned grades are transferred and form part of the degree Grade Point Average, when applicable. Students who register for courses elsewhere without a Letter of Permission must reapply to the Faculty.

Students who are on academic suspension may not elect courses at another institution for credit toward an Environment, Earth, and Resources degree at this university.

### Attendance at Other Institutions

Students who attend other post-secondary institutions without a Letter of Permission must reapply for admission to the Faculty before the application deadline and be academically competitive for admission. Similarly, students registered in the Clayton H. Riddell Faculty of Environment, Earth, and Resources may not be registered at another academic institution at the same time unless they are registered elsewhere on a Letter of Permission. The penalty for unauthorized or undisclosed attendance may be disciplinary withdrawal or academic suspension.

### 3.13 Dean's Honour List ,

A student's eligibility for the Dean's Honour List designation is evaluated after each term.

Students enrolled in a minimum of 12 credit hours of course work during a term and who achieve a term Grade Point Average of 3.50 or higher will be placed on the Dean's Honour List. The Dean's Honour List designation will appear on the student's transcript of marks.

### 3.14 Academic Warning, Probation and Academic Suspension (Academic Standing),

Students shall be evaluated after each academic term in which they receive a final grade in a minimum of 4 credit hours, with the assessment being based on the resulting Degree Grade Point Average (DGPA). This assessment will determine a student's academic standing to be: faculty minimum met, academic warning, on probation, suspension warning, or academic suspension.

#### Faculty Minimum Met

To be in good standing and permitted to continue in a degree program, a student must achieve a 2.00 Degree Grade Point Average at each point of assessment and the notation 'Faculty Minimum Met' will be recorded on the student's transcript of marks. Note: For students completing the Bachelor of Arts in Geography, Faculty Minimum Met is based on a Degree Standards Table found in [section 5.2.2](#).

Degree programs may define additional performance requirements for continuation and graduation. Students are referred to the appropriate section of this Chapter for further details as follows:

[Section 5.3: Bachelor of Arts in Geography.](#)  
[Section 6.3: Bachelor of Science in Physical Geography.](#)  
[Section 7.3: Bachelor of Environmental Science and Bachelor of Environmental Studies.](#)  
[Section 8.3.1: Bachelor of Science in Geological Sciences - Major.](#)  
[Section 8.3.2: Bachelor of Science in Geological Sciences - Honours.](#)  
[Section 8.3.3: Bachelor of Science in Geological Sciences - General.](#)

#### Academic Warning

Students will receive an academic warning if, at the point of assessment following a term, s/he fails to achieve the required minimum performance level. The notation 'Academic Warning' will be recorded on the student's transcript of marks.

#### On Probation

Those who fail to meet the required minimum performance level following an Academic Warning assessment will be placed **on probation**. The notation 'On Probation' will be recorded on the student's transcript of marks.

#### Suspension Warning

Those who fail to meet the required minimum performance level following an On Probation assessment will be placed on **Suspension Warning**. The notation, 'Suspension Warning' will be recorded on the student's transcript of marks.

#### Academic Suspension

Those who fail to meet the required minimum performance level following a Suspension Warning assessment will be placed on **Academic Suspension for One Year**. The notation, 'Academic Suspension for One Year' will be recorded on the student's transcript of marks. A student placed on academic suspension is not allowed to register in the Clayton H. Riddell Faculty of Environment, Earth, and Resources during the duration of the suspension.



A student will be placed on **academic suspension for two years** under the following circumstances:

- Upon return from one year suspension, the student fails to attain a 2.00 degree grade point average in the following two terms after the probationary assessment (see a [Riddell Faculty student advisor](#) for information).

The Faculty calculates that it is mathematically impossible for the student to clear his/her probationary standing by the following assessment period.

The student exceeds the maximum number of credit hours of failed courses.

The notation, 'Academic Suspension for Two Years', will be recorded on the student's transcript of marks. Those serving two-year suspensions are required to start the degree afresh should they choose to return to the Clayton H. Riddell Faculty of Environment, Earth, and Resources. Students may appeal for transfer of credit up to 30 credit hours in courses in which a minimum grade of 'C' was achieved.

Students should consult with a [Riddell Faculty student advisor](#) for further assistance in clearing their academic warning, on probation, suspension warning, or academic suspension academic standing.

### 3.15 Academic Misconduct,

Academic misconduct is intentional cheating, fabrication, impersonation, or plagiarism. It is also knowingly helping or attempting to help others to be dishonest. Academic dishonesty lowers scholastic quality and defrauds others who will eventually depend on their own knowledge and integrity.

Plagiarism or any other form of cheating on examinations, term tests, or assignments is subject to academic penalty as serious as suspension or expulsion from the Faculty or University.

Students who are unsure of what constitutes academic misconduct should refer to the regulations in the [Chapter General Academic Regulations, Academic Integrity, Plagiarism and Cheating](#) in this *Calendar* and consult with your professor or instructor.

### 3.16 Termwork and Debarment ,

A student is responsible for the completion of laboratory work, assignments, tests and other class work as prescribed by the course syllabus. A student who does not meet termwork requirements to the satisfaction of the Associate Dean (Academic) will receive a warning to this effect. If this warning is ignored, a student may be debarred from the course. Any student debarred from a course receives an automatic grade of 'F' in that course.

### 3.17 Deferred Examinations,

A student who is unable to write a final examination because of illness or other incapacity or compassionate reasons

should contact a student advisor in the Clayton H. Riddell Faculty of Environment, Earth, and Resources. The appropriate documentation (i.e. a medical certificate or otherwise appropriate documentation certifying the reason for the missed exam) will be required. Students are reminded to contact their home faculty (and not the faculty through which the course is offered). Please see the [missed exam information](#) on the faculty website. Refer to the [Chapter General Academic Regulations, Academic Evaluation: Deferred Examinations](#) in this *Calendar* for further information.

### 3.18 Challenge for Credit,

Some departments at the University of Manitoba offer courses by means of challenge of credit. Since the courses offered in this manner may vary from year to year, any student wishing to challenge a course for credit should contact a [Riddell Faculty student advisor](#) in the Clayton H. Riddell Faculty of Environment, Earth, and Resources general office. The [Academic Schedule](#) of this *Calendar* contains the relevant registration deadlines dates appropriate to challenge for credit.

### 3.19 Appeals Involving Academic Regulations,

The Student Appeals and Discipline Committee in the Faculty considers appeals from students who request special consideration with respect to the rules and regulations governing their degree program and qualifications for graduation.

Appeals should be addressed to: [Student Advisor](#), Secretary Student Appeals and Discipline Committee, General Office, Clayton H. Riddell Faculty of Environment, Earth, and Resources, 440 Wallace Building.

### 3.20 Student Advisor Office Hours,

**Monday through Friday:** 9:00 a.m. to 4:00 p.m.

**Email:** [Faculty\\_Environment@umanitoba.ca](mailto:Faculty_Environment@umanitoba.ca)

### 3.21 Student Responsibility,

It is your responsibility to be familiar with the regulations, courses, and graduation requirements of your degree program. You are advised to review the appropriate sections of this *Calendar* carefully when selecting your courses to ensure compliance with degree program requirements. If you are not sure of how regulations and requirements apply to your case, please consult a [Riddell Faculty student advisor](#). Since a complete graduation check is not done until you have declared your intention to graduate, you are encouraged to make an appointment with a [Riddell Faculty student advisor](#) prior to your initial registration access date to confirm you are meeting the degree requirements. Ultimately you are responsible to ensure compliance with degree program requirements.

Please contact a [Riddell Faculty student advisor](#) about declaring your graduation date.

**Note:** While we welcome the opportunity to assist you, it is important for you to realize that *it is your responsibility* to be



familiar with university and Riddell Faculty academic regulations and registration procedures as they are described in this calendar.

### 3.22 Maximum Number of Courses During a Term,

You may attempt a maximum of 15 credit hours in any one term unless otherwise stipulated by your program. If you wish to exceed the normal load you may apply in-person at the Faculty General Office, or complete the [Application to Exceed Credit Hours](#) form available on the Riddell Faculty web page ([umanitoba.ca/environment/undergraduate](http://umanitoba.ca/environment/undergraduate)).

### 3.23 Course Space Availability,

The initial registration access time is based on *academic performance*; therefore, space in all courses is available on the system from the beginning of the registration period for Fall and Winter terms.

### 3.24 Registration, Student Responsibilities

Know your registration time. Registration information is available on the Registrar's website under [Registration](#).

It is the students' responsibility to ensure that all pre-registration approvals are completed and that all pre-requisites and program approval hold have been removed prior to the registration access period. Most students who do not complete this requirement will experience a program approval hold when they access Aurora Student.

#### Steps to confirming your registration access:

1. Review your program requirements and if required, complete your [Advance/Major/Honours Program Approval](#) form. The Program Approval form is available at the Riddell Faculty webpage: [umanitoba.ca/environment/undergraduate](http://umanitoba.ca/environment/undergraduate). The Program Approval Hold will only be removed when your course selection has been approved by the student advisor.

**Students completing the Bachelor of Arts in Geography (General) or the Bachelor of Science in Geological Sciences (General) do NOT need program approval prior to registration.**

2. Obtain all required departmental permission that pertain to waivers for pre-requisites, space, and timetable conflicts.
3. Complete your registration through [Aurora Student](#).
4. Students interested in transferring between degree programs (i.e. switching from a Major to Honours, or from Major to Major Coop) must acquire the approval and submit to the student advisor in 440 Wallace Building.
5. Declaring a graduation date: Students are encouraged to declare a grad date as early as possible, and to come to the

Dean's Office, 440 Wallace, to have a [Riddell Faculty student advisor](#) review your graduation requirements.

#### What Aurora Student cannot do:

*Aurora Student* will not check degree requirements. You are responsible for knowing the requirements of your degree. Consult a Riddell Faculty student advisor for advice and assistance if degree requirements are unclear.

You cannot add or change a course classification through [Aurora Student](#). Therefore, if you are an undergraduate student and wish to take a course as an Auditor, or as Challenge for Credit, you must add this course in-person in the Riddell Faculty general office within the normal deadlines for such activity.

*Aurora Student* will not prevent a student from registering in two (or more) courses that are designated not to be held for credit with one another. It is the student's responsibility to ensure that they are not registered for courses that are ineligible to be held for credit with one another. Read the carefully. If you are unsure about a course you have selected, check with a Riddell Faculty [student advisor](#) prior to the [revision deadline](#). No academic concessions will be granted in this regard.

#### Have you been away for a While?

Students who have been away from the Riddell Faculty for more than a year cannot use Aurora Student until they have consulted a Riddell Faculty student advisor. Students who have attended another post-secondary institution since their last registration at the University of Manitoba must normally re-apply for admission.

## SECTION 4: Department of Environment and Geography

### 4.1 Academic Staff,

Please refer to the Clayton H. Riddell Faculty of Environment, Earth, and Resources [Academic Staff](#) website.

### 4.2 Undergraduate Programming in the Department of Environment and Geography,

The fields of study in this department can be divided into four overlapping areas: environmental sciences, environmental studies, human geography and physical geography. These areas are built on a diverse range of academic frameworks or foundations, including: natural, physical and social sciences, education, law, agriculture, management, medicine, humanities and architecture.

Environmental Science applies scientific knowledge from many disciplines to issues and questions relating to an increasing human population, the sustainability of resource use, degradation caused by pollution and disturbance, and the endangerment and extinction of species and natural systems. Environmental Studies applies the theory and



practice of group and organizational communication, understanding public policies and programs that underscore environmental concerns, and the need to integrate diverse social, institutional, political and legal considerations inherent in attaining environmental objectives. (Students have the opportunity to focus advanced studies in one of several areas, defined through consultation with a [Riddell Faculty student advisor](#).)

"Human Geography examines how people have been influenced by the environment and how, in turn, they have left their mark on the environment," Dr. Daniel Todd, Human Geographer. Students may choose to focus their studies into one of several areas including *Human-Environment Relations, Urban and Rural Development, Social Cultural Geography, Population, Resources and Development, and Area Studies*.

Areas of physical geography include the study of the environment through aspects of atmospheric science, geomatics, biogeography, and hydrology. Streams are currently available in *Atmospheric and Hydrological Sciences, Geomatics* (an emerging subfield, referring to the techniques of spatial data acquisition, handling and analysis) and *Physical Geography*.

Potential careers for graduates of these programs include a diverse array of possibilities in the natural sciences, social sciences, or a combination of both. Graduates are poised to assume positions where they identify and analyze the local, regional, national, and global patterns that shape our lives. As well, technical skills such as geographic information systems and remote sensing are demanded in several of the environmental sectors. Graduates of these programs can expect to enter the workforce in private, government, research, or not-for-profit sectors.

#### 4.3 Cooperative Education Option,

A [Cooperative Education Option](#) is available to students registered in either the Major or Honours degree programs in Environmental Science, Environmental Studies, or Physical Geography. Coop is an arrangement whereby students spend alternating periods in university and employment. There are several advantages to a cooperative education program for students. One benefit is that students are able to acquire both theoretical knowledge and practical experience. This experience assists them in selecting areas of specialization for their senior courses in their chosen Stream. As well, Coop assists students in their professional development by enhancing networking opportunities, participation in conferences and workshops and provides the foundation of skills and strategies required in searching and acquiring employment after graduation. Students can also defray some of the costs of their university education through these work term placements. Further information about Cooperative Education and student eligibility is available from a [Riddell Faculty student advisor](#) available in the Faculty general office.

Students electing to participate in the Cooperative Education Option will be assessed a program fee with their formal admission into the program. Once a student has accepted a

position with a Coop employer, no portion of the program fee will normally be refunded.

The Cooperative Education Option consists of two employment work terms, each over a minimum period of four months, and contributes 6 credit hours towards the four year degree program. Students complete ENVR 2900 Professional Development 1 (1.5), ENVR 3900 Professional Development 2 (1.5), work term placements ENVR 3980 Work Term 1 (0), ENVR 3990 Work Term 2 (0), and the work term report courses ENVR 3910 Work Term Report 1 (1.5) and ENVR 3920 Work Term Report 2 (1.5). Additional work terms are available to interested students. Each academic term and each employment term commence in January, May or September. While on an employment term, a Cooperative Education Option student is not permitted to take more than three additional credit hours of academic work outside of the requirements of the Coop placement without permission of a [Riddell Faculty student advisor](#).

Students are required to register in the appropriate Coop courses and pay course fees prior to beginning their placement.

For more information, please visit the [Riddell Faculty Co-operative Education Program](#) webpage.

## SECTION 5: Bachelor of Arts in Geography Degree Regulations and Program Description

**Head:** Ronald Stewart

**Campus Address/General Office:** 220 Sinnott Building

**Telephone:** (204) 474-9667

**Fax:** (204) 474-7699

**Email Address:** [environment\\_geography@umanitoba.ca](mailto:environment_geography@umanitoba.ca)

**Website:**  
[umanitoba.ca/environment/departments/geography](http://umanitoba.ca/environment/departments/geography)

### 5.1 Program Information

There are four broad categories of courses in the Geography discipline: **physical** geography is concerned with physical features on and over the globe; **human** geography examines the products of human activity; **regional** geography attempts to achieve a synthesis of physical and human geography of a particular place; and **techniques** in geography focus on analytical methods.

The attraction of Geography as a discipline lies in its diverse interests and approaches to knowledge building while being centred on the fundamental concepts of human-environment relations, location/place and space/ distance. Geographers see the world and want to know how physical processes and systems shape the land, air, water, flora and fauna around them and how these are influenced by human activity. We want to know how human societies, cultures, and economies work and how these human systems are interdependent with



each other and with natural systems. We work at a variety of geographic scales, from the micro-scale of local communities and regions, through the macro-scale of global human and physical systems. Geography embraces the study of topics as wide-ranging as: weather and climate, population distribution, agricultural systems, globalization, landforms and geomorphology, environmental perceptions, health and healthcare, and biogeography. Therefore, by selecting courses from within the department, as well as complementary courses from other academic units of the University, students can develop fascinating, focused and challenging degree programs that will prepare them for careers in a variety of areas.

The General degree in Geography provides students with a basic level of understanding of the discipline and its inter-relationships. **This degree is also a useful consideration for students planning to complete the After-Degree Bachelor of Education program (see the [Faculty of Education](#) chapter of this *Calendar*).** The General degree program may be completed entirely by Distance Education (see the Distance Education Guide for further details). The Advanced degree program in Geography provides opportunities for students who desire a broad geographical education along with a reasonable degree of specialization in a particular field of Geography. Students planning a professional career or a high degree of specialization in Geography are strongly advised to enter the Honours degree program. The Honours degree demands the highest scholastic performance of all programs available. Students are strongly advised to enter an Honours degree program with their admission to the Bachelor of Arts in Geography. Consultation with the department head is also advised.

### Structure of the B.A. Geography Degree Program

The structure of the B.A. Geography degree is summarized as follows:

A **Geography (Major)** component that varies in credit hour requirement depending on the degree program; 30 credit hours in the General; 51 credit hours in the Advanced; and 69 credit hours in the Honours. Students are not permitted to declare a second major.

Advanced and General degree students must complete a **Minor** in a subject field that is different than that of the declared major, and may be chosen from one of the other programs in the Clayton H. Riddell Faculty of Environment, Earth, and Resources. Students in the B.A. Geography are not permitted to complete a Minor in Physical Geography. The Minor requirements are described in [section 3.2](#) of this *Chapter*. Contact a [Riddell Faculty student advisor](#) in the Faculty general office for further information about eligible Minors.

Students must complete 5 subject fields with 6 credit hours in each (30 credit hours). For example: 6 credit hours in Geography, plus 6 credit hours in Environmental Science, plus 6 credit hours in Geological Sciences, plus 6 credit hours in Anthropology, plus 6 credit hours in Native Studies.

Students must also complete 6 credit hours in Humanities and 6 credit hours offered by the Faculty of Science.

### Humanities

For course subjects taught by the Faculty of Arts that can be used towards the Humanities requirement, refer to the *Chapter* for the [Faculty of Arts, Additional Faculty Regulations and Policies section](#). Music (i.e. all courses listed for Advanced Major and Minor programs except ensemble courses) and History of Art (i.e. all courses listed with course prefix FAAH) may also be eligible courses. Students should see a [Riddell Faculty student advisor](#) for further information.

Note: Students can satisfy the requirement for a Humanity, and/or Arts, or Science and at the same time satisfy the Written English or Mathematics requirement and one of the 5 subject fields required with the same 6 credit hours of courses.

The qualifications of the degree programs are summarized as follows:

### General

To qualify for the degree Bachelor of Arts in Geography, students must complete 90 credit hours including: all course requirements in their Geography General Major; a chosen minor field; the requirements in the five subject fields; and areas of Humanities and Sciences. As well, students must satisfy the Riddell Faculty regulations outlined in [section 3](#) of this *Chapter*. Minimum performance requirements include passing grades ('D' or better) in each course and a minimum degree Grade Point Average of 2.00 on Geography courses as well as the 90 credit hours that constitute the degree. Students cannot exceed 48 credit hours of failed courses.

### Advanced

To qualify for the Bachelor of Arts in Geography (Advanced) degree, students must complete 120 credit hours including: all courses and performance requirements in their Geography Advanced Major; a chosen minor field; the requirements in the five subject fields; and areas of Humanities and Sciences. As well, students must satisfy the Riddell Faculty regulations outlined in [section 3](#) of this *Chapter*. Minimum performance requirements include passing grades ('D' or better) in each course and a minimum degree Grade Point Average of 2.00 on Geography courses and the 120 credit hours which constitute the degree. Students cannot exceed 18 credit hours of failed courses.

### Honours

To qualify for the Bachelor of Arts in Geography (Honours) designation, students must complete 120 credit hours including: all course and performance requirements; the requirements in the five subject fields, and the areas of Humanities and Sciences. As well, students must satisfy the Riddell Faculty regulations outlined in [section 3](#) of this *Chapter*. Minimum performance requirements include



passing grades ('D' or better) in each course and a minimum degree Grade Point Average of 3.00 on Geography courses and the 120 credit hours which constitute the degree. Students cannot exceed 18 credit hours of failed courses.

in [Section 5.2.2](#) to be eligible for admission to the B.A. in Geography. Students who are admitted will be placed in the General degree program. Students may be eligible for transfer to either the Advanced or Honours degree program provided they satisfy the entrance requirements defined in 5.2.1. To enter the Advanced or Honours degree program, a student must consult with a [Riddell Faculty student advisor](#) in the Faculty general office.

### 5.2 Entrance Requirements

Students are required to attain a minimum degree Grade Point Average of 2.00 based on the Degree Standards Table

5.2.1 Entrance Requirements				
Degree Program in B.A. Geography	Minimum Number of Credit Hours	Minimum Degree Grade Point Average	Maximum Credit Hours of Failed courses	Additional Entrance Requirements
General	24	2.00 <sup>1</sup>	48	grade of 'C' in each of GEOG 1280 and GEOG 1290 <sup>2</sup>
Advanced	24	2.00	18	grade of 'C' in each of GEOG 1280 and GEOG 1290 <sup>2</sup>
Honours	24	3.00	18	grade of 'B' in each of GEOG 1280 and GEOG 1290 <sup>2</sup> or a GPA of 3.00 or better in all Geography courses

<sup>1</sup>Minimum Grade Point Average for entrance into the General degree program is determined using the Degree Standards Table in 5.2.2.  
<sup>2</sup>GEOG 1281 and GEOG 1291 may be used in lieu of GEOG 1280 and GEOG 1290, respectively.

### 5.2.2 Grade Point Average Calculation for Entrance and Continuation

General degree students in the B.A. Geography must attain a minimum 2.00 Grade Point Average at each point of

assessment. The Degree Standards Table listed below is used to determine a student's eligibility for admission to the Riddell Faculty as well as evaluate a student's performance after each term.

5.2.2 Degree Standards Table	
Credit hours	Minimum Degree GPA
24-30	1.80
33-45	1.85
48-60	1.90
63-75	1.95
78-90	2.00
93+ hours	2.00

### 5.3 Minimum Performance Requirements

A student's academic performance is assessed first with his/her application for admission to the Riddell Faculty and then following each *term* in which the student is registered in more than 4.0 credit hours. To be in **good standing** and permitted to continue in a degree program, a student must achieve the minimum standards outlined for his/her degree program at each point of assessment. For General degree students, this includes the Degree Standards Table outlined above in [5.2.2](#), as well as the requirements outlined in [5.3.1](#). Students in the Advanced and Honours degrees are required to satisfy the requirements listed in [5.3.1](#). Minimum academic performance is based on the degree Grade Point Average and number of failed courses. Prior to each registration, Advanced and Honours degree students must

have their course selections approved by a [Riddell Faculty student advisor](#). Students may not make any subsequent changes without receiving prior written permission.

To graduate with a B.A. Geography with the intended degree designation, a student must achieve the minimum performance standards and graduation requirements outlined in [5.3.1](#), following their last *term of registration* and satisfy all faculty and degree requirements in Geography as defined in sections [5.3.1](#) and [5.5](#) of this *Chapter*.

Students in the Honours and Advanced degree programs who do not meet these minimum performance requirements will be withdrawn from their existing program and placed in the Advanced and General degrees respectively. Students who do not meet the minimum performance requirements for



the General degree program will receive an academic warning, be placed on probation or academic suspension as defined in section [3.14 Academic Warning, Probation and Academic Suspension \(Academic Standing\)](#) in this *Chapter*. Students withdrawn from the Honours degree program may be eligible to enter the Advanced program and are required to obtain permission from a [Riddell Faculty student advisor](#).

Students withdrawn from the Honours degree program will have the notation, 'Required to Withdraw from the Honours Program', recorded on their transcript of marks. Similarly, students withdrawn from the Advanced program will have the notation, 'Required to Withdraw from the Advanced Program', recorded on their transcript of marks.

5.3.1 Minimum Performance Requirements for Continuation and Graduation					
Degree Program (Cr. Hrs.)	Minimum Performance Requirements			Additional Graduation Requirements	
	Minimum Degree Grade Point Average (GPA)	Maximum Cr. Hrs. Failed Courses	Minimum Degree GPA in Geography Courses <sup>3</sup>	Geography Courses Cr. Hr. Requirement (see <a href="#">5.5</a> also)	Residence Requirement (Cr. Hrs.) (see section 3.10 also)
General <sup>2,3</sup> (90)	2.00; see <a href="#">5.2.2</a> for continuation	48	2.00	30	48 cr. hrs. total or the final 30 cr. hrs.
Advanced <sup>1,2,3</sup> (120)	2.00	18	2.00	51	60
Honours <sup>2,1</sup> (120)	3.00	18	3.00	69	60

<sup>1</sup>The courses required in this program will satisfy the [university mathematics requirement](#).  
<sup>2</sup>Within the first 60 credit hours of courses, students must have completed 6 credit hours in each of 5 subject fields (totalling 30 credit hours). See section 5.1 for details.  
<sup>3</sup>General and Advanced degree students are required to maintain a Degree Grade Point Average of 2.00 on the courses defining their Geography Major. **Note:** Students must complete all prerequisite courses with minimum 'C' grades.

#### 5.4 Graduating with Distinction or First Class Honours With Distinction

Students graduating with a B.A. Geography (General) degree will have their degree granted 'With Distinction' if they have a minimum degree Grade Point Average of 3.80 and provided a minimum of 60 credit hours of acceptable course work is completed at the University of Manitoba.

Students graduating with a B.A. Geography (Advanced) degree will have their degree granted 'With Distinction' if they have a minimum degree Grade Point Average of 3.80

and provided a minimum of 90 credit hours of acceptable course work is completed at the University of Manitoba.

#### First Class Honours

Students in the Honours program will have their degree granted with 'First Class Honours' if they have a minimum degree Grade Point Average of 3.80 and provided a minimum of 90 credit hours of acceptable course work is completed at the University of Manitoba.

#### 5.5 B.A. Geography Program Chart

5.5 B.A. Geography <sup>5</sup>			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS<sup>1</sup> 120 CREDIT HOURS (69 credit hours in Geography)</b>			
GEOG 1280 and GEOG 1290  Plus 6 credit hours of	GEOG 2200, GEOG 2250, GEOG 2530  9 credit hours in Geography courses	GEOG 3810  Plus 18 credit hours in Geography courses numbered at the 2000-	GEOG 4660  18 credit hours in Geography courses numbered at the 4000- level



<p><a href="#">Humanities</a><sup>7</sup></p> <p>Plus 6 credit hours from the Faculty of Science</p>	<p>numbered at the 2000- or 3000-level<sup>4</sup></p> <p>12 credit hours in ancillary options<sup>3</sup></p>	<p>or 3000-level<sup>4</sup></p> <p>9 credit hours in ancillary options<sup>3</sup></p>	<p>6 credit hours in ancillary options<sup>3</sup></p>
<p>It is recommended that students complete the <a href="#">W course</a> in University 1 or Year 2</p>			
<p><b>ADVANCED</b><sup>1</sup> 120 CREDIT HOURS (51 credit hours in Geography)</p>			
<p>GEOG 1280 and GEOG 1290</p> <p>Plus 6 credit hours of <a href="#">Humanities</a><sup>7</sup></p> <p>Plus 6 credit hours from the Faculty of Science</p>	<p>GEOG 2200, GEOG 2250, GEOG 2530</p> <p>9 credit hours in Geography courses numbered at the 2000- or 3000-level<sup>5</sup></p>	<p>GEOG 3810</p> <p>Plus 6 credit hours in Geography courses numbered at the 3000-level<sup>5</sup></p>	<p>12 credit hours in Geography courses numbered at the 4000- level</p> <p>Plus 6 additional credit hours in Geography at the 2000-level or above</p>
<p>It is recommended that students complete the <a href="#">W course</a> in University 1 or Year 2</p>			
<p><b>GENERAL</b><sup>2</sup> 90 CREDIT HOURS (30 credit hours in Geography)</p>			
<p>GEOG 1280 and GEOG 1290</p> <p>Plus 6 credit hours of <a href="#">Humanities</a><sup>7</sup></p> <p>Plus 6 credit hours from the Faculty of Science</p>	<p>12 credit hours in Geography courses numbered at the 2000-level<sup>5</sup></p>	<p>12 credit hours in Geography courses numbered at the 3000- and/ or 4000- level<sup>5</sup></p>	
<p>It is recommended that students complete the <a href="#">W and M courses</a> in University 1 or Year 2. Note: 30 credit hours, with 6 credit hours in each of 5 subject fields, must be completed in the first 60 credit hours.</p>			
<p><b>MINOR</b> 18 CREDIT HOURS</p>			
<p>GEOG 1280 and GEOG 1290</p>	<p>6 credit hours in Geography courses numbered at the 2000-level</p>	<p>6 credit hours in Geography courses numbered at the 3000-level</p>	
<p><b>NOTES:</b></p> <p><sup>1</sup>Entrance into the Honours and Advanced degree programs is summarized in <a href="#">5.2.1</a>. The courses required in this program will satisfy the University Mathematics requirement.</p> <p><sup>2</sup>Entry into the General degree program is summarized in <a href="#">5.2.1 and 5.2.2</a>.</p> <p><sup>3</sup>Ancillary options are chosen in consultation with the department head.</p> <p><sup>4</sup>Among the 2000- and 3000-level courses, at least 6 credit hours must be systematic and at least 6 must be area studies. Systematic courses and area studies courses are listed in <a href="#">Section 5.6</a>.</p> <p><sup>5</sup>Among the 2000- and 3000-level courses, at least 12 credit hours must be systematic and at least 6 must be area studies. Systematic courses and area studies courses are listed in <a href="#">Section 5.6</a>. Students wishing to transfer from the General to the Advanced degree program are permitted to take either GEOG 2200 and GEOG 2250, or GEOG 2530 in either third or fourth year.</p> <p><sup>6</sup>Equivalent courses offered through Université de Saint-Boniface may be used in lieu of the specified courses identified in the degree program chart. Université de Saint-Boniface courses end in the number "1" (e.g. GEOG 1281).</p> <p><sup>7</sup>May also satisfy the Faculty of Arts requirement.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>To fulfil prerequisite requirements, a grade of "C" must be achieved, unless otherwise stated, in any course stipulated as a prerequisite to a further course.</li> <li>Students should review the current course topics available through GEOG 3740 (6), GEOG 3750 (3), GEOG 3760 (6), GEOG 3770 (3) and GEOG 4670 (3). Also, all courses are not offered every year or every term. The course schedule for the current academic term is available from the <a href="#">Class Schedule</a>.</li> <li>Students registering in certain courses may be required to participate in field trips or field components and pay a portion of the associated expenses. For details, contact the <a href="#">Department of Environment and Geography</a> general office.</li> </ul>			



### 5.6 Systematic Courses (HS, PS, TS) and Area Studies (A),

Courses numbered at the 2000- and 3000-level are arranged into Systematics (PS, HS and TS) and Area Studies (A).

B.A. Geography students may specialize in the Physical Geography (PS); Human Geography (HS); Techniques (TS); Area Studies (A) but it is not compulsory for them to do so. B.A. Geography students wishing to specialize in Physical Geography should take at least three options (18 credit hours) from courses designated 'PS'. B.A. Geography students wishing to specialize in Human Geography should take at least three options (18 credit hours) from courses designated 'HS'. Students should discuss these options with a [Riddell Faculty student advisor](#).

B.A. Geography students wishing to specialize in Applied Geography should include 2000-level courses from GEOG 2200, GEOG 2210, GEOG 2250, GEOG 2310, GEOG 2510, GEOG 2520, and GEOG 2530; and 3000-level courses from GEOG 3200, GEOG 3320, GEOG 3460, GEOG 3480W, GEOG 3520, GEOG 3540, GEOG 3580W, GEOG 3810M, GEOG 3710, GEOG 3720 and GEOG 3800.

Courses offered for the current academic term are published in the [Class Schedule](#) and can be searched by Attribute Type. To find Systematic (HS, PS, TS) courses search: 'Geography: Human', 'Geography: Physical' or 'Geography: Techniques'. To find Area Studies (A) courses search: 'Geography: Area Studies'.

### 5.7 Environment, Earth, and Resources - 1000 Level

**EER 1000** Earth: A User's Guide Cr.Hrs.3

This course will present a multi-disciplinary introduction to the Planet Earth as both the source of essential resources and as the site of resulting negative impacts. Focus in the course will be provided by addressing important and current topics, case studies, and concepts that the well-educated citizen of the Earth should understand and will include natural and human-induced processes within a broad range of spatial and temporal scales.

### 5.8 Geography 1000 level

**GEOG 1280** Introduction to Human Geography Cr.Hrs.3 (Formerly 053.128) This course studies aspects of the human world: population, settlement and resources. Not to be held with GEOG 1200 or GEOG 1201 (053.120), or GEOG 1281.

**GEOG 1290** Introduction to Physical Geography Cr.Hrs.3 (Formerly 053.129) This course studies aspects of our physical environment: climate, landforms, soils and vegetation. Not to be held with GEOG 1291 or GEOG 1200 or GEOG 1201.

### 5.8 Geography -2000 Level

**GEOG 2200** Introduction to Thematic Cartography (TS) Cr.Hrs.3

(Lab Required) (Formerly 053.220) An introduction to the principles of map compilation and reproduction, including analysis and cartographic display of spatially referenced data. Emphasis will be placed on cartographic data manipulation, generalization, and symbolization, map design, visualization and communication. Not to be held with GEOG 2221 (053.222). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2210** Economic Geography (HS) Cr.Hrs.6 (Formerly 053.221) An introduction to spatial aspects of economic activities. It includes consideration of natural resource extraction and development, industrial location theory, agriculture, and the basis of regional development. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1280 or GEOG 1281 (053.128) (C), or permission of department head.

**GEOG 2250** Introduction to Geographic Information Systems (TS) Cr.Hrs.3 (Lab Required) (Formerly 053.225) An introduction to the fundamental theoretical concepts of geographic information systems including acquisition, processing and analyzing environmental and socio-economic data. Topics to be covered include georeferencing, spatial data structures, processing, output and applications. Not to be held with GEOG 2221(053.222). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography, Geology or Environment courses numbered at the 1000 level, or permission of department head.

**GEOG 2272** Natural Hazards (PS) Cr.Hrs.3 Environmental hazards to human settlement and economy are examined with particular attention to meteorological, soil erosion, mass wasting, earthquake and volcanic phenomena. Not to be held with GEOG 2440. Prerequisite: a grade of C or better in one of GEOG 1290, GEOL 1340, or GEOL 1410, or permission of department head.

**GEOG 2300** Atmospheric Thermodynamics, Clouds and Precipitation (PS) Cr.Hrs.3 (Formerly 053.230) Critical thermodynamic processes are discussed that are associated with the Earth's atmosphere including dry and moist processes, phases of water, stability, cloud development and precipitation processes. Prerequisites: (GEOG 1290 or GEOG 1291 (053.129) (C), or (GEOG 1200) or GEOG 1201 (053.120) (C)), and (MATH 1500 or MATH 1501 (136.150) (C), or MATH 1510 (136.151) (C), or MATH 1520 (136.152) (C), or MATH 1530 (136.153) (C)).

**GEOG 2310** Introduction to Process Hydrology (PS) Cr.Hrs.3 (Formerly 053.231) This course introduces students to the near-surface components of the hydrological cycle, including the processes of precipitation, evaporation, water-biosphere interactions, infiltration, overland and stream flow. Not to be held with (053.362). Prerequisites: (GEOG 1290 or GEOG 1291 (C), or (GEOG 1200) or GEOG 1201( 053.120) (C)), and (PHYS 1020 or PHYS 1021 (016.102) (C), or PHYS 1050 or PHYS 1051 ( 016.105) (C), or MATH 1500 or MATH 1501 (136.150) (C), or MATH 1510 (136.151) (C), or MATH 1520 (136.152) (C), or MATH 1530 (136.153) (C)), or permission of department head.

**GEOG 2330** Place, Populations and Mobility: Geographic Perspectives (HS) Cr.Hrs.3

An examination of the factors controlling the number and distribution of human population. Variations in fertility, mortality and mobility will be analyzed and the causes and consequences reviewed. Not to be held with GEOG 2480 (053.248). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2372** Geography of Tourism (HS) Cr.Hrs.3

This course examines the social, economic and environmental dimensions of tourism and recreation. Historical and contemporary experiences from around the world will be studied. Not to be held with GEOG 2410 (053.241). Prerequisite: a grade of C or better in (GEOG 1200) or GEOG 1280, or permission of department head.

**GEOG 2520** Geography of Natural Resources (HS) Cr.Hrs.3

(Formerly 053.252) An introduction to the basic concepts of the subject and the distribution of resources. Stress will be placed on Canadian resources and resource requirements but examples from other resource systems will also be used. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2530** Introduction to Scientific Geographic Research (TS) Cr.Hrs.3

(Formerly 053.253) An introduction to the use of scientific methodology in geography and the application of scientific explanatory frameworks to geographic research projects. Data collection procedures are discussed with particular emphasis on measurement, sampling designs, and interview surveying techniques. Not to be held with (053.247). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2540** Weather and Climate (PS) Cr.Hrs.3

(Formerly 053.254) This half-course examines the nature, controls, and observations of weather and the variation of climate in time and space. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2550** Geomorphology (PS) Cr.Hrs.3

(Formerly 053.255) This half-course surveys a broad array of landforms in the world and the geomorphic processes responsible for their creation. Attention is strongly focused on those landform processes originating at the earth's surface. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1290 or GEOG 1291 (053.129) (C), or permission of department head.

**GEOG 2570** Geography of Canada (A) Cr.Hrs.3

(Formerly 053.257) A regional study of Canada in which the major regions of Canada are studied with respect to geographical patterns of their physical environment, settlement, culture, economic activity, and land use. Not to be held with GEOG 2560 (053.256), GEOG 2561 or GEOG 3431 (053.343). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department

head.

**GEOG 2580** Geography of the United States (A) Cr.Hrs.3 (Formerly 053.258) A regional study of the United States in which the major regions of the United States are studied with respect to geographical patterns of their physical environment, settlement, culture, economic activity, and land use. Not to be held with GEOG 2560, GEOG 2561 (053.256). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2630** Geography of Culture and Environment (HS) Cr.Hrs.3

(Formerly 053.263) An introduction to the cultural geographic study of environment, focusing on the evolution of landscape, the creation of regions, and human relationships with nature. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1280 or GEOG 1281 (053.128) (C), or permission of department head.

**GEOG 2640** Geography of Culture and Inequality (HS) Cr.Hrs.3

(Formerly 053.264) An introduction to the cultural geographic study of human and place inequalities, focusing on behaviour in landscape, group differences, and human identities. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1280 or GEOG 1281 (053.128) (C), or permission of department head.

**GEOG 2900** Geography of Canadian Prairie Landscapes (A) Cr.Hrs.3

This course introduces students to the various geographical themes, concepts and processes within the context of the natural and anthropogenic development of the Canadian prairie region. It traces the evolution of the prairie landscape. It will focus on academic writing in the discipline. Not to be held with GEOG 2450. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**5.8 Geography -3000 Level**

**GEOG 3200** Introduction to Remote Sensing (TS) Cr.Hrs.3 (Lab Required) (Formerly 053.320) The course is an introduction to the principles of optical, active and passive microwave remote sensing. A review of satellite and sensors and their geographic applications will be presented, along with digital image analysis techniques. Laboratory assignments will provide hands-on experience in dealing with remote sensing data. Not to be held with (053.454). Prerequisites: [(GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1290 or GEOG 1291 (053.129) (C)], and [PHYS 1020 or PHYS 1021 (016.102) (C), or PHYS 1050 or PHYS 1051 (016.105) (C), or MATH 1300 or MATH 1301 (136.130) (C), or MATH 1500 or MATH 1501 (136.150) (C)], or permission of department head.

**GEOG 3310** Atmospheric Dynamics, Storms and Radar (PS) Cr.Hrs.3

(Formerly 053.331) The course covers the critical dynamic processes that are associated with the Earth's atmosphere including forces that control wind, the kinematics of the wind field, general circulation, hodographs, thermal wind, laws of motion, mid-latitude circulations, convective storms and the



utility of weather radar. Prerequisite: GEOG 2300 (053.230) (C), or permission of department head.

**GEOG 3320** Introduction to Microclimates and Micrometeorology (PS) Cr.Hrs.3  
(Formerly 053.332) This course introduces the concept of energy balance climatology and examines relationships among climate, microclimate, and environments of the Earth's surface and human-made environments. Studies include bioclimates and hydroclimates. Prerequisites: (GEOG 2310 (053.231) (C)), and (GEOG 2300 (053.230) (C)), or permission of department head.

**GEOG 3330** Population Issues in the Developing World Cr.Hrs.3  
This course examines issues and trends in population growth, change, and movement in the global south dominated by developing countries. Prerequisites: a grade of C or better in GEOG 2330 or SOC 2480, or (GEOG 2480), or permission of department head.

**GEOG 3340** Migration and Mobility in a Globalized World Cr.Hrs.3  
This course surveys the geographic dimensions of migration and mobility of populations, with emphasis of contemporary events. Prerequisites: a grade of C or better in GEOG 2330 or (GEOG 2480), or permission of department head.

**GEOG 3390** Introduction to Climate Change and Its Causes (PS) Cr.Hrs.3  
The primary objective of this course is to provide students with a general understanding of the physical and astronomical factors that drive global climate change. Focus will be given to current and future climate change in the context of observations and modeling. Not to be held with GEOG 3610. Prerequisite: a minimum of three credit hours from Geography or Environment courses, or permission of department head.

**GEOG 3460** Urban Geography (HS) Cr.Hrs.6  
(Formerly 053.346) The course studies the processes and trends of urbanization; the classification of cities; central-place theory; cities as systems; land-use patterns; social forces and factorial ecology; and urban transport problems. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1280 or GEOG 1281 (053.128) (C), or permission of department head.

**GEOG 3480** Canadian Problems (A) Cr.Hrs.3  
(Formerly 053.348) The geographical basis of selected problems (e.g. regional, urban, rural, resource, land use). Prerequisite: GEOG 2560 (053.256) (C), or GEOG 2570 (053.257) (C), or GEOG 3431 (053.343) (C), or permission of department head.

**GEOG 3520** Energy and Society (HS) Cr.Hrs.6  
(Formerly 053.352) The course reviews in detail the role of energy in modern society. Explanation of basic energy laws and flows in the biosphere precedes discussion of energy resources, technologies, uses, and impacts. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 3540** Regional Development Planning Theory and Practise (HS) Cr.Hrs.6  
(Formerly 053.354) The course considers regional disparities

in a range of Western economies including Canada. The regional problem is explored theoretically and in the application of policies to alleviate disparities. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1280 or GEOG 1281 (053.128) (C), or GEOG 2210 or GEOG 2211 (053.221) (C), or permission of department head.

**GEOG 3580** Landforms (PS) Cr.Hrs.6  
(Formerly 053.358) Present-day and Pleistocene glacial processes and landforms are examined in one term; slope processes and forms as well as the activities of rivers comprise the other. Human modification of these systems is discussed. Not to be held with GEOL 3490 (007.349). Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1290 or GEOG 1291 (053.129) (C), or GEOG 2550 or GEOG 2551 (053.255) (C), or permission of department head.

**GEOG 3590** Geography of Developing Countries (A) Cr.Hrs.6  
(Formerly 053.359) The main theme is modernization; examples from South Asia and Africa south of the Sahara. Historical development, population and social problems, land use and conservation, urbanization and industrialization. Not to be held with GEOG 3591. Prerequisite: a grade of C or better in six credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 3640** Social Geography of the Environment (HS) Cr.Hrs.3  
This course provides an intermediate-level assessment of current geographical approaches to society and environment. Students are exposed to critical realist, social constructionist, Marxist, feminist and post-Colonial traditions as they are applied to environmental and social justice, globalization and public health. It includes discussion and a community-based learning project. Prerequisite: a grade of C or better in (GEOG 1200) or GEOG 1280, or permission of department head.

**GEOG 3730** Geographic Information Systems (TS) Cr.Hrs.3  
(Lab Required) (Formerly 053.373) Weekly two-hour lab. An introduction to geographic information systems (GIS) input, processing, output and applications. Prerequisite: GEOG 2250 (053.225) (C), or permission of department head.

**GEOG 3740** Field Studies in Geography (A,TS) Cr.Hrs.6  
(Formerly 053.374) A field course designed to introduce students to either a detailed area study or to field techniques employed for specific geographic enquiry. Prerequisite: Permission of department head.

**GEOG 3750** Field Studies in Geography (A,TS) Cr.Hrs.3  
(Formerly 053.375) A field course designed to introduce students to either a detailed area study or to field techniques employed for specific geographic enquiry. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 3760** Special Topics in Geography Cr.Hrs.6  
(Formerly 053.376) This course will vary from year to year depending on the needs of students and the interests of instructors. Prerequisite: Permission of department head.

**GEOG 3770** Special Topics in Geography Cr.Hrs.3  
(Formerly 053.377) This course will vary from year to year



depending on the needs of students and the interests of instructors. Prerequisite: Permission of department head.

**GEOG 3800** Geography of Transportation Development (HS) Cr.Hrs.3

(Formerly 053.380) This course examines the development of selected modes of transportation and their associated route and network development. Emphasis is on the place of transportation in the cultural, economic, and physical landscape of Canada and the United States since 1800. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 3810** Quantitative Research Methods in Geography (TS) Cr.Hrs.3

This course focuses on the quantitative analytical methods available for the interpretation on physical and human geography applications. Not to be held with GEOG 3680 (053.368). Prerequisite: GEOG 2530 (053.253) or STAT 1000 or STAT 1001 (005.100), or permission of department head.

**GEOG 3850** Sustainable Manitoba (A) Cr.Hrs.3

This course approaches local sustainability issues from an interdisciplinary perspective. By looking at the ecological, social and economic aspects from a variety of discipline perspectives, a fuller understanding of sustainability is achieved. The broad range of perspectives is achieved through participation of guest speakers from other faculties and outside of the university as well as excursion outside the classroom. Not to be held with ENVR 3850. Prerequisite: 60 credit hours of course work, or permission of department head.

**GEOG 3860** Animal Geographies (HS) Cr.Hrs.3

This course presents a variety of topics concerning the interactions between humans and animals, how humans influence and use animals, and the many roles animals play in human lives and environments. Animal Geographies lies at a meeting point between physical and human geography, where we must consider the blurring boundaries between what it means to be animal/human, and the implications of how animals are used and represented. A wide variety of perspectives, beliefs, and points of view will be explored. Prerequisite: Permission of department head.

**GEOG 3870** Food Geographies Cr.Hrs.3

This course provides a critical examination of the geographies of food at a variety of scales, from the body to the global. The course focuses on themes in three interconnected areas: 1) food production and the global food system from farm to plate including agribusiness and alternative food production and distribution models; 2) food consumption habits and beliefs and foodways as geographically contingent material culture; and 3) food (in) security and its relationship to health and wellbeing. This course is cross-listed as HNSC 3630. Prerequisite: a grade of C or better in GEOG 1280 or GEOG 1281 or (GEOG 1200), or permission of department head.

**GEOG 3900** Geography of Manitoba (A) Cr.Hrs.3

A regional study of Manitoba emphasizing the unique character and diversity of Manitoba's cultural landscapes. The historical, social, cultural, economic and political distinctiveness along with the impact of European settlement and aboriginal displacement will be discussed. Prerequisite:

a grade of C or better in GEOG 2900, or permission of department head.

## 5.8 Geography -4000 Level

**GEOG 4050** Ecosystem Management Cr.Hrs.3

This course will provide students with an understanding of the practical applications of ecological science, environmental policy, and resource management approaches in the large-scale planning of landscapes. The course will review ecological principles and trace the historical development of the ecosystem concept. Comparisons are made to other possible environmental management approaches. The synthesis of major elements and concepts will be reinforced through case studies on the Manitoba landscape, with an emphasis on practical learning by students through field seminars and group discussions. Not to be held with ENVR 4050. Prerequisite: Permission of department head.

**GEOG 4060** Biogeography Cr.Hrs.3

This course will provide students with a general understanding of the historical, ecological, analytical, and conservation aspects of biogeography. The course will also have a dual focus on the principles and concepts of reasons for the distribution of plants and animals worldwide, as well as incorporating discussion on as many local (Manitoba, Canada, North America) examples as possible. Not to be held with ENVR 4060. Prerequisite: Permission of department head.

**GEOG 4200** Advanced Methods in Remote Sensing Cr.Hrs.3

(Lab Required) (Formerly 053.420) Provides instruction in the current theory and application of remote sensing technology to Earth system Science. Emphasis will be placed on the processing and interpretation of remote sensing imagery and the integration of remote sensing data with other spatial data. Not to be held with (053.454). Prerequisite: GEOG 3200 (053.320) (C), or permission of department head.

**GEOG 4260** Sacred Lands Cr.Hrs.3

(Formerly 053.426) Students will increase their understanding of the importance and significance of Sacred Lands and Sacred Spaces to International Indigenous Peoples. Experiential learning, seminars, and a field component may be included. Not to be held with NATV 4260 (032.426). Prerequisite: Permission of department head.

**GEOG 4280** Gender and the Human Environment Cr.Hrs.3

This upper-level seminar course will develop in students a depth and breadth of understanding appropriate to the honours undergraduate/graduate level in the area of gender geography scholarship. From critical social science theoretical positions, this course asks students to examine what we can learn about how humans live on the earth if we see them as gendered. Just as we may also understand humans and their interactions in and with spaces, places and environments through the lenses of race, ethnicity, class, age and/or combinations of these categories with gender. Prerequisite: A grade of C or better in a minimum of six credit hours in Geography, or permission of department head.

**GEOG 4290** Geographies of Health and Health Care Cr.Hrs.3

(Formerly 053.429) This course provides an introduction to and critical examination of the geographies of health and healthcare. Topics include perceptions and determinations of health and health care; health care delivery, focusing on spatial patterns and inequities; and the relationship between environment and health, particularly impacts of environmental contamination. Prerequisite: Permission of department head.

**GEOG 4300** Synoptic Meteorology and Weather Analysis Cr.Hrs.3

(Formerly 053.430) Applied aspects of meteorology are described in terms of weather analysis and forecasting techniques for synoptic-scales and meso-scales using various meteorological tools. An introduction to severe weather forecasting techniques will also be described. Prerequisite: GEOG 3310 (053.331) (C), or permission of department head.

**GEOG 4310** Boundary-Layer Climatology and Micrometeorology Cr.Hrs.3

(Formerly 053.431) A seminar course on advanced topics in microclimatology and micrometeorology. Prerequisite: GEOG 3320 (053.332) (C), or permission of department head.

**GEOG 4330** Concepts in Atmospheric Modeling Cr.Hrs.3

This course will primarily focus on numerical modeling applications and techniques of the Earth's atmosphere with an emphasis on weather prediction. This includes understanding basic modeling terminology, numerical schemes, structure of models, types of models, what is required to run a model, and an introduction to data assimilation and ensemble techniques to weather prediction. Not to be held with GEOG 4320. Prerequisite: GEOG 3310 (C) or GEOG 3320 (C), or permission of department head.

**GEOG 4350** Parks and Protected Areas Planning and Management: Field Studies Cr.Hrs.6

The course is taught in two segments, an on-campus component and field study component taking place in Banff National Park. The on-campus component examines the historical development of the concept of parks and protected areas, the role of interpretation, management and research in the parks and emerging issues in the management of parks and protected areas. In addition, during the on-campus component planning for the field will take place. The field segment will focus on a wide variety of management issues with particular attention to Banff National Park. Emerging issues and trends will be examined and past management responses evaluated. There will be opportunities for students to investigate specific management issues of interest to them and to participate in current research being conducted in the park. This course is also offered in the Faculty of Kinesiology and Recreation Management as REC 4350. Prerequisite: Permission of department head.

**GEOG 4390** Global Climate Change Cr.Hrs.3

Students will be introduced to the complexities of climate changes through a series of introductory lectures and reading assignments that focus on recent scientific publications and review articles (mathematical skills are not required). Both sides of the climate change debate will be addressed in weekly assignments, and students will defend

their conclusions in classroom discussion. Each student will take on a project in some aspect of climate change -- glaciers, sea ice, temperature trends, precipitation, agriculture, animal migration, aerosols, or a regional impact. Prerequisite: A grade of C or better in GEOG 3390 (or GEOG 3610 or 053.361), or permission of department head.

**GEOG 4410** Rural Land Use Cr.Hrs.3

(Formerly 053.441) This course focuses on the dynamics of change on the rural-urban fringe. It involves seminars and individual field research. Prerequisite: Permission of department head.

**GEOG 4550** Topics in Air Pollution: Climatology, Location, and Planning Cr.Hrs.3

(Formerly 053.455) An introduction to air pollution sources; meteorology of air pollution; calculation of ground concentrations; effects and controls; environmental planning and policy. Prerequisite: Permission of department head.

**GEOG 4560** Techniques in Climatology Cr.Hrs.3

(Formerly 053.456) Instrumentation, the sources of climatic data, and the use of satellite photography, as well as methods of analysis and presentation are discussed. Prerequisite: GEOG 3320 (053.332) (C), or permission of department head.

**GEOG 4580** Concepts and Methods in Geography Cr.Hrs.6

(Formerly 053.458) This course surveys the historical development of the nature, scope, and methods of human and physical geography. Prerequisite: Permission of department head.

**GEOG 4590** Spatial Analysis Cr.Hrs.3

(Formerly 053.459) The theory and techniques of spatial statistical data exploration, inference and hypothesis testing as they pertain to geography analysis are explored. The role of spatial analytical techniques in field investigations, GIS and remote sensing applications are discussed. Prerequisites: (GEOG 3680 or 053.368) (C), and (MATH 1300 or MATH 1301 (136.130) or MATH 1500 or MATH 1501 (136.150) (C)), or permission of department head.

**GEOG 4650** Models in Regional Analysis Cr.Hrs.3

(Formerly 053.465) Emphasis is placed on the use of regression techniques in regional analysis including the classical ordinary least squares methods and two-stage least squares. Migration and industrial location models are developed and calibrated using these techniques. Prerequisite: Permission of department head.

**GEOG 4660** Honours Thesis Cr.Hrs.6

(Formerly 053.466) This course involves the production of a thesis under the supervision of a department faculty member. Prerequisite: Permission of department head.

**GEOG 4670** Selected Issues Cr.Hrs.3

(Formerly 053.467) Intensive study of selected geographic issues. Prerequisite: Prearranged written consent of an individual instructor and permission of department head.

**GEOG 4720** Advanced Methods in Geographic Information Systems Cr.Hrs.3

(Lab Required) (Formerly 053.472) Weekly two-hour lab. This course focuses on the practical application of techniques used in Geographic Information Systems (GIS) and the development of techniques used in Geographic



Information Systems (GIS) and the development of GIS models. The development, testing and presentation of GIS data, models and results are studied. Prerequisite: Permission of department head.

## SECTION 6: Bachelor of Science in Physical Geography Degree Regulations, Program Description and Courses Offered by

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### 6.1 Program Information

Physical Geography includes the study of the environment through aspects of atmospheric science, geomorphology, biogeography, and hydrology, all of which draw upon the natural and applied sciences to understand the natural environment. Atmospheric sciences examine the physical and biophysical processes at and near the earth's surface shaping climate and determining the weather. These processes are examined over cascading scales, local to global. Hydrology studies the flow of water between the Earth's surface and the atmosphere, including the quantity and quality of water resources as well as the spatial variability in the hydrologic cycle. The examination of processes at the earth's surface and the associated landforms is called geomorphology. Various sub-disciplines in geomorphology include weathering and erosional processes, volcanoes, glacial and river systems. Biogeography studies the interrelationships between the biospheric environment and the physical environment. Formation of soils, ecosystem and biome cycles and components, as well as human interaction with the physical environment are all topical areas in biogeography.

Geomatics is an emerging field referring to the techniques of spatial data acquisition, handling, and analysis. Included within this field have been geographic applications of computer analysis and spatial modeling, spatial statistics, remote sensing technology, and geographic information systems. Many of these techniques have their origins in the applied sciences, but both physical and human geographers have contributed greatly to their development and application. The application of such methodologies in geographic fields, such as resource management, urban geography, climate change, and applied geography has also provided closer co-operation between human and physical geography, as well as promoting considerable interdisciplinary research with other University disciplines.

The Major and Honours B.Sc. degree programs in Physical Geography serve students who desire advanced study in the academic subject matter of various themes contained within Physical Geography. The Honours program in particular is intended for students interested in the opportunity for

exposure to advanced geographic research. As such, the Honours program demands higher academic performance. Students who are ineligible to enter Honours in their second year may establish this in the following year on the basis of their improved scholastic performance. The degree programs may be pursued on a full or part-time basis.

### Minor in Another Department

Students in the B.Sc. Physical Geography have the opportunity to complete a Minor in a subject field that is different than that of the declared Major, and which normally consist of 18 credit hours from a department offering this option at the University of Manitoba. Students in the B.Sc. Physical Geography are not permitted to complete a Minor in the B.A. Geography. Students can declare only one Minor. The Minor requirements are described in [section 3.2](#) of this *Chapter*. Contact a [Riddell Faculty student advisor](#) in the Faculty general office for further information about eligible Minors.

### Streams

Students are required to complete a stream approved by a Riddell Faculty student advisor. Students in the Major or Major (Coop) programs are required to complete a minimum of 30 credit hours of 2000- (or higher) level courses, of which at least 18 credit hours must be at or above the 3000-level. The B.Sc. Honours and Honours (Coop) programs require students to complete 39 credit hours in a Stream, of which at least 24 credit hours are defined at or above the 3000-level and must include *GEOG 4660 Honours Thesis* (6). Streams are currently available in *Atmospheric and Hydrological Sciences*, *Geomatics* and *Physical Geography*. See the department and/ or a [Riddell Faculty student advisor](#) for current information about these Streams.

### Major

To qualify for the degree, Bachelor of Science in Physical Geography (Major), a student must complete 120 credit hours with passing grades ('D' or better) and a minimum degree grade point average of 2.00. Major (Coop) students must attain a minimum degree Grade Point Average of 2.50. Students must complete all faculty requirements. There is no limit to the number of credit hours a student completes provided he/she does not exceed 18 credit hours of failed courses.

### Honours

To qualify for the degree Bachelor of Science in Physical Geography (Honours and Honours Coop), a student must complete 120 credit hours with passing grades ('D' or better) and a minimum degree grade point average of 3.00 in the courses that constitute the degree. Students must complete all faculty requirements. There is no limit to the number of credit hours a student completes provided he/she does not exceed 18 credit hours of failed courses.



### 6.2 Entrance Requirements

Students complete the first-year of their degree program in University 1 where they select courses from a wide variety of offerings including from the Clayton H. Riddell Faculty of Environment, Earth, and Resources. Students admitted from

University 1 are placed in the Major degree program until they have completed a minimum of 48 credit hours after which they may transfer to the Honours program or remain in the Major. To make a program transfer, students must consult a [Riddell Faculty student advisor](#).

#### 6.2.1 Entrance Requirements

Degree Program in Physical Geography	Minimum Number of Credit Hours	Minimum Degree Grade Point Average	Additional Entrance Requirements
Honours	48	3.00	A grade of 'B' or better in GEOG 1290 <sup>3</sup> ; a grade of 'C+' or better in 12 credit hours from PHYS 1020 <sup>3</sup> (or PHYS 1050), MATH 1500 <sup>2,3</sup> , PHYS 1030 (or PHYS 1070), MATH 1300 <sup>3</sup> (or MATH 1310)
Honours (Coop) <sup>1</sup>	60	3.00	ENVR 2900; students must satisfy the requirements for Entrance/continuation in the regular program and (normally) have completed GEOG 2200, GEOG 2250, GEOG 2300, GEOG 2310, GEOG 2550, PHYS 1020 <sup>3</sup> (or PHYS 1050), and MATH 1500 <sup>2,3</sup>
Major	24	2.00	A grade of 'C' or better in GEOG 1290 <sup>3</sup> ; a grade of 'C+' or better in 6 credit hours from PHYS 1020 <sup>3</sup> (or PHYS 1050) and MATH 1500 <sup>2,3</sup>
Major (Coop) <sup>1</sup>	60	2.50	ENVR 2900; students must satisfy the requirements for Entrance/continuation in the regular program and (normally) have completed GEOG 2200, GEOG 2250, GEOG 2300, GEOG 2310, GEOG 2550, PHYS 1020 <sup>3</sup> (or PHYS 1050), PHYS 1030 <sup>3</sup> (or PHYS 1070), MATH 1300 <sup>3</sup> (or MATH 1310) and MATH 1500 <sup>2,3</sup>

<sup>1</sup>Students may be permitted to enter the program without satisfying all requirements listed. Students should consult with the Cooperative Education Coordinator for further information.

<sup>2</sup>MATH 1510 or MATH 1520 or MATH 1690 may be used in lieu of MATH 1500.

<sup>3</sup>Equivalent courses offered through Université de Saint-Boniface may be used in lieu of the specified courses identified in the degree program chart. Université de Saint-Boniface courses end in the number 1.

### 6.3 Minimum Performance Requirements for Continuation and Graduation

A student's academic performance will be assessed with his/her application for admission to the Clayton H. Riddell Faculty of Environment, Earth, and Resources and following each *term* thereafter. A Riddell Faculty student advisor must approve a student's registration each Fall/Winter and Summer term. Any revisions in this schedule should also be approved prior to the end of the registration revision period.

To be in **good standing** and permitted to continue in a degree program, a student must achieve the minimum standards at each point of assessment. This assessment is based on the student's minimum degree Grade Point Average; the grades received in each of GEOG 1290 (or GEOG 1291), GEOG 2200, GEOG 2250 (or GEOG 2251), GEOG 2300, GEOG 2310, GEOG 2550, GEOG 3810; and the number of failed courses after admission to the Clayton H. Riddell Faculty of Environment, Earth, and Resources.

#### 6.3.1 Minimum Performance Requirements

Minimum Performance Requirements				Graduation Requirements <sup>1</sup>	
Degree Program (Credit Hours)	Minimum Degree Grade Point Average (DGPA)	Maximum Credit Hours of Failed Courses	Physical Geography Core: Minimum Grade Requirements in GEOG 1290 <sup>2</sup> , GEOG 2200 <sup>2</sup> , GEOG 2250 <sup>2</sup> , GEOG 2300, GEOG 2310, GEOG 2272, GEOG 2550, GEOG 3810	Stream (2000-Level or Higher)	Coop Option Courses
Major (120)	2.00	18	'C'	30 credit hours of which at least 18 credit hours must be at the 3000-level or higher; minimum Degree GPA of 2.00.	
Major Coop (120)	2.50	18	'C'	30 credit hours of which at least 18 credit hours must be at the 3000-level or higher; minimum Degree GPA of 2.00.	ENVR 2900, ENVR 3900, ENVR 3910, ENVR 3980, ENVR 3920, ENVR 3990; (ENVR 4910 and ENVR 4980 are optional)



Honours (120)	3.00	18	'B' in GEOG 1290; 'C+' grades in others	39 credit hours of which at least 24 credit hours must be at the 3000-level or higher; completion of GEOG 4660; minimum 'C+' grade in each course.	
Honours Coop (120)	3.00	18	'B' in GEOG 1290; 'C+' grades in others	39 credit hours of which at least 24 credit hours must be at the 3000-level or higher; completion of GEOG 4660; minimum 'C+' grade in each course.	ENVR 2900, ENVR 3900, ENVR 3910, ENVR 3980, ENVR 3920, ENVR 3990; (ENVR 4910 and ENVR 4980 are optional)
<p><sup>1</sup>B.Sc. Physical Geography students must successfully complete a minimum of 60 credit hours at the University of Manitoba to satisfy the Residence Requirement. The courses used to satisfy the requirement must be acceptable for credit in the Clayton H. Riddell Faculty of Environment, Earth, and Resources.</p> <p><sup>2</sup>Equivalent courses offered through Université de Saint-Boniface may be used in lieu of the specified courses identified in the degree program chart. Université de Saint-Boniface courses end in the number 1.</p>					

To **graduate** from the Bachelor Science in Physical Geography with the intended degree designation, a student must achieve the minimum standards and graduation requirements outlined above in 6.3.1 following the final term of registration and satisfy all degree course requirements in the foundation, physical geography core and Stream.

Students in the Honours program who do not meet these minimum performance requirements for continuation or graduation will be withdrawn from the degree program and placed in the Major provided they are eligible based on their performance. Students who do not meet the minimum performance requirements of the Major will be placed on academic warning, probation or academic suspension as defined in [section 3.14 Academic Warning, Probation and Academic Suspension](#) in this *Chapter*.

Students withdrawn from the Honours program as a result of their inability to meet minimum performance requirements will have the notation, 'Required to Withdraw from the Honours Program,' recorded on their transcript of marks. Similarly, students withdrawn from the Major program will have the notation, 'Required to Withdraw from the Major Program,' recorded on their transcript of marks.

#### 6.4 Graduating with Distinction or First Class Honours With Distinction

Students graduating with a B.Sc. Physical Geography (Major) degree will have their degree granted 'With Distinction' if they have a minimum Degree Grade Point Average of 3.50 on all course work.

The term 'Degree with Distinction' will appear both on the parchment and on the student's transcript of marks.

#### First Class Honours

Students in the Honours program will have their degree granted with 'First Class Honours' if they have a minimum Degree Grade Point Average of 3.50 based on all acceptable course work. The term First Class Honours will appear both on the parchment and on the student's transcript of mark.

#### 6.5.a B.Sc. Physical Geography Honours Program Chart

click for <a href="#">6.5.b B.Sc. Physical Geography Major Program Chart</a>			
<b>HONOURS 120 CREDIT HOURS</b>			
GEOG 1290 <sup>7</sup> PHYS 1020 <sup>3</sup> , MATH 1500 <sup>4</sup> PHYS 1030 <sup>3</sup> , MATH 1300 <sup>4</sup> ; or 6 credit hours from	GEOG 2200, GEOG 2250, GEOG 2300, GEOG 2310, GEOG 2530, GEOG 2540, GEOG 2550  Whichever of, PHYS 1030 <sup>3</sup> , MATH 1300 <sup>4</sup> , or 6 credit hours from GEOG 1340 <sup>5</sup> , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> , MATH 1700 <sup>4</sup>	GEOG 2272 <sup>8</sup> , GEOG 3810 <sup>9</sup>  9 credit hours from GEOG 1340 <sup>5</sup> , COMP 1010, CHEM 1300, CHEM 1310,  STAT 1000, STAT 2000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> , MATH 1700 <sup>4</sup> not yet taken	GEOG 4660



Plus 6 credit hours from the Faculty of Arts	1700 <sup>4</sup> not yet taken		
It is recommended that students complete the <a href="#">W course</a> in University 1 or Year 2			
Plus a <b>Stream</b> approved by a Riddell Faculty student advisor. Honours Stream requirements are as follows: 33 credit hours of 2000- (or higher) level courses, of which 18 credit hours must be at the 3000- or 4000-level.			
<b>HONOURS COOPERATIVE OPTION 120 CREDIT HOURS</b>			
GEOG 1290 <sup>7</sup> PHYS 1020 <sup>3</sup> , MATH 1500 <sup>4</sup> PHYS 1030 <sup>3</sup> , MATH 1300 <sup>4</sup> ; or 6 credit hours from	GEOG 2200, GEOG 2250, GEOG 2300, GEOG 2310, GEOG 2530, GEOG 2540, GEOG 2550, ENVR 2900	GEOG 2272 <sup>8</sup> , GEOG 3810 <sup>9</sup> , ENVR 3900, ENVR 3980, ENVR 3910	GEOG 4660  ENVR 3990, ENVR 3920 (ENVR 4980 and ENVR 4910 are optional)
GEOG 1340 <sup>5</sup> , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> , MATH 1700 <sup>4</sup>	Whichever of, PHYS 1030 <sup>3</sup> , MATH 1300 <sup>4</sup> , or 6 credit hours from GEOG 1340 <sup>5</sup> , COMP 1010, CHEM 1300, CHEM 1310,  STAT 1000, STAT 2000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> , MATH 1700 <sup>4</sup> not yet taken	9 credit hours from GEOG 1340 <sup>5</sup> , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> , MATH 1700 <sup>4</sup> not yet taken	
Plus 6 credit hours from the Faculty of Arts			
It is recommended that students complete the <a href="#">W course</a> in University 1 or Year 2			
Plus a <b>Stream</b> approved by a Riddell Faculty student advisor. Honours Stream requirements are as follows: 33 credit hours of 2000- (or higher) level courses, of which 18 credit hours must be at the 3000- or 4000-level.			
<b>NOTES:</b>			
<sup>1</sup> Entrance into the degree programs is summarized in <a href="#">6.2.1 in this Chapter</a> .			
<sup>2</sup> The courses required in this program will satisfy the <a href="#">University Mathematics requirement</a> .			
<sup>3</sup> PHYS 1050 and PHYS 1070 may be used in lieu of PHYS 1020 and PHYS 1030, respectively.			
<sup>4</sup> MATH 1510 or MATH 1520 may be used in lieu of MATH 1500; or MATH 1690 may be used in place of MATH 1500 (or equivalent) and MATH 1700; or MATH 1310 may be used in lieu of MATH 1300.			
<sup>5</sup> GEOG 1440 may be used in lieu of GEOG 1340.			
<sup>6</sup> BIOL 1000 and BIOL 1010 may be used in lieu of BIOL 1020 and BIOL 1030.			
<sup>7</sup> Equivalent courses offered through Université de Saint-Boniface may be used in lieu of the specified courses identified in the degree program chart. Université de Saint-Boniface courses end in the number 1 (e.g. GEOG 1281).			
<sup>8</sup> GEOG 2440 may be used in lieu of GEOG 2272.			
<sup>9</sup> GEOG 3680 may be used in lieu of GEOG 3810.			
<b>Note:</b>			
To fulfil prerequisite requirements a grade of 'C' must be achieved, unless otherwise stated, in any course stipulated as a prerequisite to a further course.			
<ul style="list-style-type: none"> <li>Students should review the course topics available for GEOG 3740 (6), GEOG 3750 (3), GEOG 3760 (6), GEOG 3770 (3) and GEOG 4670 (3). Also, all courses are not offered every year. The course schedule for the current academic term is available from the <a href="#">Class Schedule</a>.</li> <li>Students registering in certain courses may be required to participate in field trips or field components and pay a portion of the associated expenses. For details, contact the <a href="#">Department of Environment and Geography</a> general office.</li> </ul>			
<b>IMPORTANT:</b> The Honours and <a href="#">Major programs</a> need not be completed in the course order described in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.			

**6.5.b B.Sc. Physical Geography Major Program Chart**

click here for <a href="#">6.5.a B.Sc. Physical Geography Honours Program Chart</a>			
<b>MAJOR 120 Credit Hours</b>			
GEOG 1290 <sup>7</sup> PHYS 1020 <sup>3</sup> , MATH 1500 <sup>4</sup> PHYS 1030 <sup>3</sup> , MATH 1300 <sup>4</sup> ; or 6 credit hours from	GEOG 2200, GEOG 2250, GEOG 2300, GEOG 2310, GEOG 2530, GEOG 2540, GEOG 2550  Whichever of, PHYS 1030 <sup>3</sup> , MATH 1300 <sup>4</sup> ,	GEOG 2272, GEOG 3810 9 credit hours from GEOG 1340 <sup>5</sup> , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> ,	



GEOL 1340 <sup>5</sup> , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> , MATH 1700 <sup>4</sup>  Plus 6 credit hours from the Faculty of Arts	or 6 credit hours from GEOL 1340 <sup>5</sup> , COMP1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> , MATH 1700 <sup>4</sup> not yet taken	MATH 1700 <sup>4</sup> not yet taken	
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It is recommended that students complete the W course in University 1 or Year 2

Plus a **Stream** approved by a Riddell Faculty student advisor. Major Stream requirements are as follows: 30 credit hours of 2000- (or higher) level courses, of which 18 credit hours must be at the 3000- or 4000-level.

**MAJOR COOPERATIVE OPTION 120 CREDIT HOURS**

GEOG 1290 <sup>7</sup> , PHYS 1020 <sup>3</sup> , MATH 1500 <sup>4</sup> , PHYS 1030 <sup>3</sup> , MATH 1300 <sup>4</sup> ; or 6 credit hours from GEOL 1340 <sup>5</sup> , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> , MATH 1700 <sup>4</sup>  Plus 6 credit hours from the Faculty of Arts	GEOG 2200, GEOG 2250, GEOG 2300, GEOG 2310, GEOG 2530, GEOG 2540, GEOG 2550, ENVR 2900  Whichever of, PHYS 1030 <sup>3</sup> , MATH 1300 <sup>4</sup> , or 6 credit hours from GEOL 1340 <sup>5</sup> , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> , MATH 1700 <sup>4</sup> not yet taken	GEOG 2272, GEOG 3810, ENVR 3900, ENVR 3980, ENVR 3910  9 credit hours from GEOL 1340 <sup>5</sup> , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 <sup>6</sup> , BIOL 1030 <sup>6</sup> , MATH 1700 <sup>4,7</sup> not yet taken	ENVR 3990, ENVR 3920 (ENVR 4980 and ENVR 4910 are optional)
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It is recommended that students complete the W course in University 1 or Year 2

Plus a **Stream** approved by a Riddell Faculty student advisor. Major Stream requirements are as follows: 30 credit hours of 2000- (or higher) level courses, of which 18 credit hours must be at the 3000- or 4000-level.

**NOTE:** Students in the Major Coop are required to maintain an overall degree Grade Point Average of 2.50.

**MINOR 18 CREDIT HOURS**

GEOG 1290 <sup>7</sup>	15 credit hours selected from 2000-, 3000-, or 4000-level courses designated as Physical Geography (PS) or Techniques (TS) courses in the Geography defined in sections <a href="#">5.6 in this Chapter</a> .
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**NOTES:**

<sup>1</sup>Entrance into the degree programs is summarized in [6.2.1 in this Chapter](#).

<sup>2</sup>The courses required in this program will satisfy the University Mathematics requirement.

<sup>3</sup>PHYS 1050 and PHYS 1070 may be used in lieu of PHYS 1020 and PHYS 1030, respectively.

<sup>4</sup>MATH 1510 or MATH 1520 may be used in lieu of MATH 1500; or MATH 1690 may be used in place of MATH 1500 (or equivalent) and MATH 1700.

<sup>5</sup>GEOL 1440 may be used in lieu of GEOL 1340.

<sup>6</sup>BIOL 1000 and BIOL 1010 may be used in lieu of BIOL 1020 and BIOL 1030.

<sup>7</sup>Equivalent courses offered through Université de Saint-Boniface may be used in lieu of the specified courses identified in the degree program chart. Université de Saint-Boniface courses end in the number 1 (e.g. GEOG 1281).

**Note:**

To fulfil prerequisite requirements a grade of 'C' must be achieved, unless otherwise stated, in any course stipulated as a prerequisite to a further course.

- Students should review the course topics available for GEOG 3740 (6), GEOG 3750 (3), GEOG 3760 (6), GEOG 3770 (3) and GEOG 4670 (3). Also, all courses are not offered every year. The course schedule for the current academic term is available from the [Class Schedule](#).
- Students registering in certain courses may be required to participate in field trips or field components and pay a portion of the associated expenses. For details, contact the Department of Environment and Geography general office.

**IMPORTANT:** The Honours and Major programs need not be completed in the course order described in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.



## 6.6 Environment, Earth, and Resources - 1000 Level

### **EER 1000** Earth: A User's Guide Cr.Hrs.3

This course will present a multi-disciplinary introduction to the Planet Earth as both the source of essential resources and as the site of resulting negative impacts. Focus in the course will be provided by addressing important and current topics, case studies, and concepts that the well-educated citizen of the Earth should understand and will include natural and human-induced processes within a broad range of spatial and temporal scales.

## 6.7 Geography -1000 Level

### **GEOG 1280** Introduction to Human Geography Cr.Hrs.3

(Formerly 053.128) This course studies aspects of the human world: population, settlement and resources. Not to be held with GEOG 1200 or GEOG 1201 (053.120), or GEOG 1281.

### **GEOG 1290** Introduction to Physical Geography Cr.Hrs.3

(Formerly 053.129) This course studies aspects of our physical environment: climate, landforms, soils and vegetation. Not to be held with GEOG 1291 or GEOG 1200 or GEOG 1201.

## 6.7 Geography -2000 Level

### **GEOG 2200** Introduction to Thematic Cartography (TS) Cr.Hrs.3

(Lab Required) (Formerly 053.220) An introduction to the principles of map compilation and reproduction, including analysis and cartographic display of spatially referenced data. Emphasis will be placed on cartographic data manipulation, generalization, and symbolization, map design, visualization and communication. Not to be held with GEOG 2221 (053.222). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

### **GEOG 2210** Economic Geography (HS) Cr.Hrs.6

(Formerly 053.221) An introduction to spatial aspects of economic activities. It includes consideration of natural resource extraction and development, industrial location theory, agriculture, and the basis of regional development. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1280 or GEOG 1281 (053.128) (C), or permission of department head.

### **GEOG 2250** Introduction to Geographic Information Systems (TS) Cr.Hrs.3

(Lab Required) (Formerly 053.225) An introduction to the

fundamental theoretical concepts of geographic information systems including acquisition, processing and analyzing environmental and socio-economic data. Topics to be covered include georeferencing, spatial data structures, processing, output and applications. Not to be held with

GEOG 2221(053.222). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography, Geology or Environment courses numbered at the 1000 level, or permission of department head.

### **GEOG 2272** Natural Hazards (PS) Cr.Hrs.3

Environmental hazards to human settlement and economy are examined with particular attention to meteorological, soil erosion, mass wasting, earthquake and volcanic phenomena. Not to be held with GEOG 2440. Prerequisite: a grade of C or better in one of GEOG 1290, GEOL 1340, or GEOL 1410, or permission of department head.

### **GEOG 2300** Atmospheric Thermodynamics, Clouds and Precipitation (PS) Cr.Hrs.3

(Formerly 053.230) Critical thermodynamic processes are discussed that are associated with the Earth's atmosphere including dry and moist processes, phases of water, stability, cloud development and precipitation processes.

Prerequisites: (GEOG 1290 or GEOG 1291 (053.129) (C), or (GEOG 1200) or GEOG 1201 (053.120) (C)), and (MATH 1500 or MATH 1501 (136.150) (C), or MATH 1510 (136.151) (C), or MATH 1520 (136.152) (C), or MATH 1530 (136.153) (C)).

### **GEOG 2310** Introduction to Process Hydrology (PS) Cr.Hrs.3

(Formerly 053.231) This course introduces students to the near-surface components of the hydrological cycle, including the processes of precipitation, evaporation, water-biosphere interactions, infiltration, overland and stream flow. Not to be held with (053.362). Prerequisites: (GEOG 1290 or GEOG 1291 (C), or (GEOG 1200) or GEOG 1201( 053.120) (C)), and (PHYS 1020 or PHYS 1021 (016.102) (C), or PHYS 1050 or PHYS 1051 ( 016.105) (C), or MATH 1500 or MATH 1501 (136.150) (C), or MATH 1510 (136.151) (C), or MATH 1520 (136.152) (C), or MATH 1530 (136.153) (C)), or permission of department head.

### **GEOG 2330** Place, Populations and Mobility: Geographic Perspectives (HS) Cr.Hrs.3

An examination of the factors controlling the number and distribution of human population. Variations in fertility, mortality and mobility will be analyzed and the causes and consequences reviewed. Not to be held with GEOG 2480 (053.248). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

### **GEOG 2372** Geography of Tourism (HS) Cr.Hrs.3

This course examines the social, economic and environmental dimensions of tourism and recreation. Historical and contemporary experiences from around the world will be studied. Not to be held with GEOG 2410 (053.241). Prerequisite: a grade of C or better in (GEOG 1200) or GEOG 1280, or permission of department head.

### **GEOG 2520** Geography of Natural Resources (HS) Cr.Hrs.3

(Formerly 053.252) An introduction to the basic concepts of the subject and the distribution of resources. Stress will be placed on Canadian resources and resource requirements but examples from other resource systems will also be used. Prerequisite: a grade of C or better in a minimum of three



credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2530** Introduction to Scientific Geographic Research (TS) Cr.Hrs.3

(Formerly 053.253) An introduction to the use of scientific methodology in geography and the application of scientific explanatory frameworks to geographic research projects. Data collection procedures are discussed with particular emphasis on measurement, sampling designs, and interview surveying techniques. Not to be held with (053.247). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2540** Weather and Climate (PS) Cr.Hrs.3

(Formerly 053.254) This half-course examines the nature, controls, and observations of weather and the variation of climate in time and space. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2550** Geomorphology (PS) Cr.Hrs.3

(Formerly 053.255) This half-course surveys a broad array of landforms in the world and the geomorphic processes responsible for their creation. Attention is strongly focused on those landform processes originating at the earth's surface. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1290 or GEOG 1291 (053.129) (C), or permission of department head.

**GEOG 2570** Geography of Canada (A) Cr.Hrs.3

(Formerly 053.257) A regional study of Canada in which the major regions of Canada are studied with respect to geographical patterns of their physical environment, settlement, culture, economic activity, and land use. Not to be held with GEOG 2560 (053.256), GEOG 2561 or GEOG 3431 (053.343). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2580** Geography of the United States (A) Cr.Hrs.3

(Formerly 053.258) A regional study of the United States in which the major regions of the United States are studied with respect to geographical patterns of their physical environment, settlement, culture, economic activity, and land use. Not to be held with GEOG 2560, GEOG 2561 (053.256). Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 2630** Geography of Culture and Environment

(HS) Cr.Hrs.3  
(Formerly 053.263) An introduction to the cultural geographic study of environment, focusing on the evolution of landscape, the creation of regions, and human relationships with nature. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1280 or GEOG 1281 (053.128) (C), or permission of department head.

**GEOG 2640** Geography of Culture and Inequality

(HS) Cr.Hrs.3  
(Formerly 053.264) An introduction to the cultural geographic study of human and place inequalities, focusing on behaviour in landscape, group differences, and human

identities. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1280 or GEOG 1281 (053.128) (C), or permission of department head.

**GEOG 2900** Geography of Canadian Prairie Landscapes (A) Cr.Hrs.3

This course introduces students to the various geographical themes, concepts and processes within the context of the natural and anthropogenic development of the Canadian prairie region. It traces the evolution of the prairie landscape. It will focus on academic writing in the discipline. Not to be held with GEOG 2450. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

## 6.7 Geography -3000 Level

**GEOG 3200** Introduction to Remote Sensing (TS) Cr.Hrs.3

(Lab Required) (Formerly 053.320) The course is an introduction to the principles of optical, active and passive microwave remote sensing. A review of satellite and sensors and their geographic applications will be presented, along with digital image analysis techniques. Laboratory assignments will provide hands-on experience in dealing with remote sensing data. Not to be held with (053.454). Prerequisites: [(GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1290 or GEOG 1291 (053.129) (C)], and [PHYS 1020 or PHYS 1021 (016.102) (C), or PHYS 1050 or PHYS 1051 (016.105) (C), or MATH 1300 or MATH 1301 (136.130) (C), or MATH 1500 or MATH 1501 (136.150) (C)], or permission of department head.

**GEOG 3310** Atmospheric Dynamics, Storms and Radar (PS) Cr.Hrs.3

(Formerly 053.331) The course covers the critical dynamic processes that are associated with the Earth's atmosphere including forces that control wind, the kinematics of the wind field, general circulation, hodographs, thermal wind, laws of motion, mid-latitude circulations, convective storms and the utility of weather radar. Prerequisite: GEOG 2300 (053.230) (C), or permission of department head.

**GEOG 3320** Introduction to Microclimates and Micrometeorology (PS) Cr.Hrs.3

(Formerly 053.332) This course introduces the concept of energy balance climatology and examines relationships among climate, microclimate, and environments of the Earth's surface and human-made environments. Studies include bioclimates and hydroclimates. Prerequisites: (GEOG 2310 (053.231) (C)), and (GEOG 2300 (053.230) (C)), or permission of department head.

**GEOG 3330** Population Issues in the Developing World Cr.Hrs.3

This course examines issues and trends in population growth, change, and movement in the global south dominated by developing countries. Prerequisites: a grade of C or better in GEOG 2330 or SOC 2480, or (GEOG 2480), or permission of department head.

**GEOG 3340** Migration and Mobility in a Globalized World Cr.Hrs.3

This course surveys the geographic dimensions of migration and mobility of populations, with emphasis of contemporary events. Prerequisites: a grade of C or better in GEOG 2330



or (GEOG 2480), or permission of department head.

**GEOG 3390** Introduction to Climate Change and Its Causes (PS) Cr.Hrs.3

The primary objective of this course is to provide students with a general understanding of the physical and astronomical factors that drive global climate change. Focus will be given to current and future climate change in the context of observations and modeling. Not to be held with GEOG 3610. Prerequisite: a minimum of three credit hours from Geography or Environment courses, or permission of department head.

**GEOG 3460** Urban Geography (HS) Cr.Hrs.6

(Formerly 053.346) The course studies the processes and trends of urbanization; the classification of cities; central-place theory; cities as systems; land-use patterns; social forces and factorial ecology; and urban transport problems. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1280 or GEOG 1281 (053.128) (C), or permission of department head.

**GEOG 3480** Canadian Problems (A) Cr.Hrs.3

(Formerly 053.348) The geographical basis of selected problems (e.g. regional, urban, rural, resource, land use). Prerequisite: GEOG 2560 (053.256) (C), or GEOG 2570 (053.257) (C), or GEOG 3431 (053.343) (C), or permission of department head.

**GEOG 3520** Energy and Society (HS) Cr.Hrs.6

(Formerly 053.352) The course reviews in detail the role of energy in modern society. Explanation of basic energy laws and flows in the biosphere precedes discussion of energy resources, technologies, uses, and impacts. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 3540** Regional Development Planning Theory and Practise (HS) Cr.Hrs.6

(Formerly 053.354) The course considers regional disparities in a range of Western economies including Canada. The regional problem is explored theoretically and in the application of policies to alleviate disparities. Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1280 or GEOG 1281 (053.128) (C), or GEOG 2210 or GEOG 2211 (053.221) (C), or permission of department head.

**GEOG 3580** Landforms (PS) Cr.Hrs.6

(Formerly 053.358) Present-day and Pleistocene glacial processes and landforms are examined in one term; slope processes and forms as well as the activities of rivers comprise the other. Human modification of these systems is discussed. Not to be held with GEOL 3490 (007.349). Prerequisite: (GEOG 1200) or GEOG 1201 (053.120) (C), or GEOG 1290 or GEOG 1291 (053.129) (C), or GEOG 2550 or GEOG 2551 (053.255) (C), or permission of department head.

**GEOG 3590** Geography of Developing Countries

(A) Cr.Hrs.6  
(Formerly 053.359) The main theme is modernization; examples from South Asia and Africa south of the Sahara. Historical development, population and social problems, land use and conservation, urbanization and industrialization. Not to be held with GEOG 3591. Prerequisite: a grade of C or better in six credit hours from Geography courses numbered

at the 1000 level, or permission of department head.

**GEOG 3640** Social Geography of the Environment (HS) Cr.Hrs.3

This course provides an intermediate-level assessment of current geographical approaches to society and environment. Students are exposed to critical realist, social constructionist, Marxist, feminist and post-Colonial traditions as they are applied to environmental and social justice, globalization and public health. It includes discussion and a community-based learning project. Prerequisite: a grade of C or better in (GEOG 1200) or GEOG 1280, or permission of department head.

**GEOG 3730** Geographic Information Systems (TS) Cr.Hrs.3

(Lab Required) (Formerly 053.373) Weekly two-hour lab. An introduction to geographic information systems (GIS) input, processing, output and applications. Prerequisite: GEOG 2250 (053.225) (C), or permission of department head.

**GEOG 3740** Field Studies in Geography (A,TS) Cr.Hrs.6

(Formerly 053.374) A field course designed to introduce students to either a detailed area study or to field techniques employed for specific geographic enquiry. Prerequisite: Permission of department head.

**GEOG 3750** Field Studies in Geography (A,TS) Cr.Hrs.3

(Formerly 053.375) A field course designed to introduce students to either a detailed area study or to field techniques employed for specific geographic enquiry. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 3760** Special Topics in Geography Cr.Hrs.6

(Formerly 053.376) This course will vary from year to year depending on the needs of students and the interests of instructors. Prerequisite: Permission of department head.

**GEOG 3770** Special Topics in Geography Cr.Hrs.3

(Formerly 053.377) This course will vary from year to year depending on the needs of students and the interests of instructors. Prerequisite: Permission of department head.

**GEOG 3800** Geography of Transportation Development (HS) Cr.Hrs.3

(Formerly 053.380) This course examines the development of selected modes of transportation and their associated route and network development. Emphasis is on the place of transportation in the cultural, economic, and physical landscape of Canada and the United States since 1800. Prerequisite: a grade of C or better in a minimum of three credit hours from Geography courses numbered at the 1000 level, or permission of department head.

**GEOG 3810** Quantitative Research Methods in Geography (TS) Cr.Hrs.3

This course focuses on the quantitative analytical methods available for the interpretation on physical and human geography applications. Not to be held with GEOG 3680 (053.368). Prerequisite: GEOG 2530 (053.253) or STAT 1000 or STAT 1001 (005.100), or permission of department head.

**GEOG 3850** Sustainable Manitoba (A) Cr.Hrs.3

This course approaches local sustainability issues from an interdisciplinary perspective. By looking at the ecological,



social and economic aspects from a variety of discipline perspectives, a fuller understanding of sustainability is achieved. The broad range of perspectives is achieved through participation of guest speakers from other faculties and outside of the university as well as excursion outside the classroom. Not to be held with ENVR 3850. Prerequisite: 60 credit hours of course work, or permission of department head.

**GEOG 3860 Animal Geographies (HS) Cr.Hrs.3**

This course presents a variety of topics concerning the interactions between humans and animals, how humans influence and use animals, and the many roles animals play in human lives and environments. Animal Geographies lies at a meeting point between physical and human geography, where we must consider the blurring boundaries between what it means to be animal/human, and the implications of how animals are used and represented. A wide variety of perspectives, beliefs, and points of view will be explored. Prerequisite: Permission of department head.

**GEOG 3870 Food Geographies Cr.Hrs.3**

This course provides a critical examination of the geographies of food at a variety of scales, from the body to the global. The course focuses on themes in three interconnected areas: 1) food production and the global food system from farm to plate including agribusiness and alternative food production and distribution models; 2) food consumption habits and beliefs and foodways as geographically contingent material culture; and 3) food (in) security and its relationship to health and wellbeing. This course is cross-listed as HNSC 3630. Prerequisite: a grade of C or better in GEOG 1280 or GEOG 1281 or HNSC 1200 or (GEOG 1200), or permission of department head.

**GEOG 3900 Geography of Manitoba (A) Cr.Hrs.3**

A regional study of Manitoba emphasizing the unique character and diversity of Manitoba's cultural landscapes. The historical, social, cultural, economic and political distinctiveness along with the impact of European settlement and aboriginal displacement will be discussed. Prerequisite: a grade of C or better in GEOG 2900, or permission of department head.

## 6.7 Geography -4000 Level

**GEOG 4050 Ecosystem Management Cr.Hrs.3**

This course will provide students with an understanding of the practical applications of ecological science, environmental policy, and resource management approaches in the large-scale planning of landscapes. The course will review ecological principles and trace the historical development of the ecosystem concept. Comparisons are made to other possible environmental management approaches. The synthesis of major elements and concepts will be reinforced through case studies on the Manitoba landscape, with an emphasis on practical learning by students through field seminars and group discussions. Not to be held with ENVR 4050. Prerequisite: Permission of department head.

**GEOG 4060 Biogeography Cr.Hrs.3**

This course will provide students with a general understanding of the historical, ecological, analytical, and conservation aspects of biogeography. The course will also have a dual focus on the principles and concepts of reasons

for the distribution of plants and animals worldwide, as well as incorporating discussion on as many local (Manitoba, Canada, North America) examples as possible. Not to be held with ENVR 4060. Prerequisite: Permission of department head.

**GEOG 4200 Advanced Methods in Remote Sensing Cr.Hrs.3**

(Lab Required) (Formerly 053.420) Provides instruction in the current theory and application of remote sensing technology to Earth system Science. Emphasis will be placed on the processing and interpretation of remote sensing imagery and the integration of remote sensing data with other spatial data. Not to be held with (053.454). Prerequisite: GEOG 3200 (053.320) (C), or permission of department head.

**GEOG 4260 Sacred Lands Cr.Hrs.3**

(Formerly 053.426) Students will increase their understanding of the importance and significance of Sacred Lands and Sacred Spaces to International Indigenous Peoples. Experiential learning, seminars, and a field component may be included. Not to be held with NATV 4260 (032.426). Prerequisite: Permission of department head.

**GEOG 4280 Gender and the Human Environment Cr.Hrs.3**

This upper-level seminar course will develop in students a depth and breadth of understanding appropriate to the honours undergraduate/graduate level in the area of gender geography scholarship. From critical social science theoretical positions, this course asks students to examine what we can learn about how humans live on the earth if we see them as gendered. Just as we may also understand humans and their interactions in and with spaces, places and environments through the lenses of race, ethnicity, class, age and/or combinations of these categories with gender. Prerequisite: A grade of C or better in a minimum of six credit hours in Geography, or permission of department head.

**GEOG 4290 Geographies of Health and Health Care Cr.Hrs.3**

(Formerly 053.429) This course provides an introduction to and critical examination of the geographies of health and healthcare. Topics include perceptions and determinations of health and health care; health care delivery, focusing on spatial patterns and inequities; and the relationship between environment and health, particularly impacts of environmental contamination. Prerequisite: Permission of department head.

**GEOG 4300 Synoptic Meteorology and Weather Analysis Cr.Hrs.3**

(Formerly 053.430) Applied aspects of meteorology are described in terms of weather analysis and forecasting techniques for synoptic-scales and meso-scales using various meteorological tools. An introduction to severe weather forecasting techniques will also be described. Prerequisite: GEOG 3310 (053.331) (C), or permission of department head.

**GEOG 4310 Boundary-Layer Climatology and Micrometeorology Cr.Hrs.3**

(Formerly 053.431) A seminar course on advanced topics in microclimatology and micrometeorology. Prerequisite: GEOG 3320 (053.332) (C), or permission of department



head.

**GEOG 4330** Concepts in Atmospheric Modeling Cr.Hrs.3  
This course will primarily focus on numerical modeling applications and techniques of the Earth's atmosphere with an emphasis on weather prediction. This includes understanding basic modeling terminology, numerical schemes, structure of models, types of models, what is required to run a model, and an introduction to data assimilation and ensemble techniques to weather prediction. Not to be held with GEOG 4320. Prerequisite: GEOG 3310 (C) or GEOG 3320 (C), or permission of department head.

**GEOG 4350** Parks and Protected Areas Planning and Management: Field Studies Cr.Hrs.6  
The course is taught in two segments, an on-campus component and field study component taking place in Banff National Park. The on-campus component examines the historical development of the concept of parks and protected areas, the role of interpretation, management and research in the parks and emerging issues in the management of parks and protected areas. In addition, during the on-campus component planning for the field will take place. The field segment will focus on a wide variety of management issues with particular attention to Banff National Park. Emerging issues and trends will be examined and past management responses evaluated. There will be opportunities for students to investigate specific management issues of interest to them and to participate in current research being conducted in the park. This course is also offered in the Faculty of Kinesiology and Recreation Management as REC 4350. Prerequisite: Permission of department head.

**GEOG 4390** Global Climate Change Cr.Hrs.3  
Students will be introduced to the complexities of climate changes through a series of introductory lectures and reading assignments that focus on recent scientific publications and review articles (mathematical skills are not required). Both sides of the climate change debate will be addressed in weekly assignments, and students will defend their conclusions in classroom discussion. Each student will take on a project in some aspect of climate change -- glaciers, sea ice, temperature trends, precipitation, agriculture, animal migration, aerosols, or a regional impact. Prerequisite: A grade of C or better in GEOG 3390 (or GEOG 3610 or 053.361), or permission of department head.

**GEOG 4410** Rural Land Use Cr.Hrs.3  
(Formerly 053.441) This course focuses on the dynamics of change on the rural-urban fringe. It involves seminars and individual field research. Prerequisite: Permission of department head.

**GEOG 4550** Topics in Air Pollution: Climatology, Location, and Planning Cr.Hrs.3  
(Formerly 053.455) An introduction to air pollution sources; meteorology of air pollution; calculation of ground concentrations; effects and controls; environmental planning and policy. Prerequisite: Permission of department head.

**GEOG 4560** Techniques in Climatology Cr.Hrs.3  
(Formerly 053.456) Instrumentation, the sources of climatic data, and the use of satellite photography, as well as methods of analysis and presentation are discussed. Prerequisite: GEOG 3320 (053.332) (C), or permission of

department head.

**GEOG 4580** Concepts and Methods in Geography Cr.Hrs.6  
(Formerly 053.458) This course surveys the historical development of the nature, scope, and methods of human and physical geography. Prerequisite: Permission of department head.

**GEOG 4590** Spatial Analysis Cr.Hrs.3  
(Formerly 053.459) The theory and techniques of spatial statistical data exploration, inference and hypothesis testing as they pertain to geography analysis are explored. The role of spatial analytical techniques in field investigations, GIS and remote sensing applications are discussed. Prerequisites: (GEOG 3680 or 053.368) (C), and (MATH 1300 or MATH 1301 (136.130) or MATH 1500 or MATH 1501 (136.150) (C)), or permission of department head.

**GEOG 4650** Models in Regional Analysis Cr.Hrs.3  
(Formerly 053.465) Emphasis is placed on the use of regression techniques in regional analysis including the classical ordinary least squares methods and two-stage least squares. Migration and industrial location models are developed and calibrated using these techniques. Prerequisite: Permission of department head.

**GEOG 4660** Honours Thesis Cr.Hrs.6  
(Formerly 053.466) This course involves the production of a thesis under the supervision of a department faculty member. Prerequisite: Permission of department head.

**GEOG 4670** Selected Issues Cr.Hrs.3  
(Formerly 053.467) Intensive study of selected geographic issues. Prerequisite: Prearranged written consent of an individual instructor and permission of department head.

**GEOG 4720** Advanced Methods in Geographic Information Systems Cr.Hrs.3  
(Lab Required) (Formerly 053.472) Weekly two-hour lab. This course focuses on the practical application of techniques used in Geographic Information Systems (GIS) and the development of techniques used in Geographic Information Systems (GIS) and the development of GIS models. The development, testing and presentation of GIS data, models and results are studied. Prerequisite: Permission of department head.

## SECTION 7: Bachelor of Environmental Science and Bachelor of Environmental Studies Degree Regulations, Program Descriptions and Courses Offered by

**Head:** Ronald Stewart

**Campus Address/General Office:** 220 Sinnott Building

**Telephone:** (204) 474-9667

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### 7.1 Program Information

The Clayton H. Riddell Faculty of Environment, Earth, and Resources offers General, Major, and Honours degree programs leading to a Bachelor of Environmental Science (B.Env.Sc.) and Bachelor of Environmental Studies (B.Env.St.). Through an interdisciplinary approach, environmental issues relating to human populations, sustainable resource development, pollution and conservation, environmental health, and endangerment and preservation of species are explored in conjunction with alternative conditions that have the potential to reverse current trends and contribute to ecological sustainability. Students have access to undergraduate courses offered by the Clayton H. Riddell Faculty of Environment, Earth, and Resources as well as the Faculties of Agricultural and Food Sciences, Arts, Law, Engineering, Architecture, and Science in order to complete their education. They are expected to take many courses outside the Riddell Faculty enabling them to obtain a truly interdisciplinary education.

The Major and Honours degree programs serve students who desire advanced study in an environmental field. The programs are intended for students interested in professional training and the opportunity for advanced research. Honours degree programs demand higher academic performance and lead most directly to graduate studies. Students who are ineligible to enter the Honours degree program in their third year may establish this in the following year on the basis of their improved scholastic performance. See a [Riddell Faculty student advisor](#) in the Faculty general office for information. The degree programs may be pursued on a full- or part-time basis.

The B.Env.Sc. and B.Env.St. degree programs share a general structure that includes a foundation of either introductory Sciences or Social Sciences/ Humanities. Students complete an environmental core and a Focus Area that is defined through consultation with a [Riddell Faculty student advisor](#) in the Faculty general office. Students completing the General degree program are required to complete 9 credit hours in a Focus Area; Major, Major Coop, Honours and Honours Coop students complete 33 credit hours in a Focus Area. Other Focus Area requirements are defined in the graduation requirements in [section 7.3.1](#) in this *Chapter*. You may also refer to the [Focus Area Brochure](#) for further information.

#### General

To qualify for the degree Bachelor of Environmental Science (General) or Bachelor of Environmental Studies (General), students must complete 90 credit hours including all faculty and degree requirements (including the foundation, environmental core and 9 credit hours of minimum 2000-level courses in a Focus Area). Minimum performance requirements include passing grades ('D' or better) in each course and a minimum degree Grade Point Average of 2.00. There is no limit to the number of credit hours a student completes provided he/she does not exceed 48 credit hours of failed courses.

#### Major

To qualify for the degree Bachelor of Environmental Science (Major) or Bachelor of Environmental Studies (Major), a student must complete 120 credit hours with a minimum degree grade point average of 2.00. Focus Area requirements are as follows: 33 credit hours of which 21 credit hours must be completed at the 3000- or 4000-level; 2.00 Grade Point Average. Major (Coop) students must attain a minimum degree Grade Point Average of 2.50. There is no limit to the number of credit hours a student completes provided he/she does not exceed 18 credit hours of failed courses.

#### Honours

To qualify for the degree Bachelor of Environmental Science (Honours) or Bachelor of Environmental Studies (Honours), a student must complete 120 credit hours with a minimum degree grade point average of 3.25. Focus Area requirements are as follows: 33 credit hours of which 21 credit hours must be completed at the 3000- or 4000-level; 3.00 Grade Point Average and minimum 'C+' grades. There is no limit to the number of credit hours a student completes provided he/she does not exceed 18 credit hours of failed courses.

#### Minor in Another Department

Students in the B.Env.Sc. and B.Env.St. have the opportunity to complete a Minor in a subject field that is different than that of the declared major, and which normally consist of 18 credit hours from a department offering this option at the University of Manitoba. Students are not permitted to complete a Minor in Environmental Science or Environmental Studies. Contact a [Riddell Faculty student advisor](#) in the Faculty general office for further information about eligible Minors.

#### Eco-Canada Accreditation

The Environmental Science program is accredited to the [National Standard of Environmental Programs](#) in Canada by ECO Canada.

### 7.2 Entrance Requirements

Students admitted from University 1 are placed in the Major degree program in either the Bachelor of Environmental Science or Bachelor of Environmental Studies until they have completed a minimum of 48 credit hours after which they can transfer to the General or Honours program or remain in the Major. To make a program transfer, students must consult with a [Riddell Faculty student advisor](#).

Transfer students, and Second Degree students may be eligible for direct entry into the General or Honours programs. These students should consult with a [Riddell Faculty student advisor](#) in the general office.

7.2.1 and 7.2.2 define the Entrance requirements for the degree programs in the Bachelor of Environmental Science and Bachelor of Environmental Studies, respectively.



### 7.2.1 Bachelor of Environmental Science Entrance Requirements

Degree Program in B.Env.Sc.	Minimum Number of Credit Hours	Minimum Degree Grade Point Average	Additional Entrance Requirements
Honours	48	3.25	No failures on entry <sup>1</sup> ; a grade of 'B' or better in ENVR 1000 and ENVR 2000 as well as a minimum 'C+' in 6 hours of BIOL 1020 <sup>3</sup> , BIOL 1030 <sup>3</sup> or CHEM 1310 <sup>3</sup> and 'C' in the other course.
Honours (Coop) <sup>2</sup>	60	3.25	No failures on entry <sup>1</sup> ; ENVR 2900; students must satisfy the requirements for entrance/continuation in the regular program and (normally) have completed ENVR 1000, ENVR 2000, ENVR 2270, ENVR 3160, STAT 1000 <sup>3</sup> , STAT 2000 <sup>3</sup> , BIOL 2300 <sup>3</sup> (AGEC 2370), ECON 2390 (ABIZ 2390), BIOL 1020 <sup>3</sup> , BIOL 1030 <sup>3</sup> and one of GEOG 1290 <sup>3</sup> or GEOL 1340.
Major	24	2.00	12 credit hours in ENVR 1000, ENVR 2000, BIOL 1020 <sup>3</sup> , BIOL 1030 <sup>3</sup> , CHEM 1300 <sup>3</sup> , CHEM 1310 <sup>3</sup> , STAT 1000 <sup>3</sup> , STAT 2000 <sup>3</sup> , MATH 1500 <sup>3</sup> (or MATH 1200 <sup>3</sup> , MATH 1300 <sup>3</sup> , MATH 1310, MATH 1510, MATH 1520), one of GEOG 1290 <sup>3</sup> or GEOL 1340, PHYS 1020 <sup>3</sup> (or PHYS 1050 <sup>3</sup> ), PHYS 1030 <sup>3</sup> (or PHYS 1070 <sup>3</sup> ), with a grade of 'C+' or better in six of the 12 credit hours, and a grade of 'C' or better in the remaining six credit hours.
Major (Coop) <sup>2</sup>	60	2.50	ENVR 2900; students must satisfy the requirements for continuation in the regular program and (normally) have completed ENVR 1000, ENVR 2000, ENVR 2270, ENVR 3160, STAT 1000 <sup>3</sup> , STAT 2000 <sup>3</sup> , BIOL 2300 <sup>3</sup> (AGEC 2370), ECON 2390 (ABIZ 2390), BIOL 1020 <sup>3</sup> , BIOL 1030 <sup>3</sup> , and one of GEOG 1290 <sup>3</sup> or GEOL 1340.
General	48	2.00	

<sup>1</sup>Students may be permitted to enter the program without satisfying all requirements listed. Students should consult with a Student Advisor for further information.

<sup>2</sup>Students may be permitted to enter the program without satisfying all requirements listed. Students should consult with the [Cooperative Education](#) Coordinator for further information.

<sup>3</sup>Equivalent courses offered through Université de Saint-Boniface may be used in lieu of the specified course identified in the entrance requirements chart. Université de Saint-Boniface courses end in the number '1' (e.g. CHEM 1301).

### 7.2.2 Bachelor of Environmental Studies Entrance Requirements

Degree Program in B.Env.St.	Minimum Number of Credit Hours	Minimum Grade Point Average	Additional Entrance Requirements
Honours	48	3.25	No failures on entry <sup>1</sup> ; a grade of 'B' or better in ENVR 1000 and ENVR 2000; GEOG 1280 <sup>3</sup> and GEOG 1290 <sup>3</sup> , ENVR 3160, with a grade of 'C+' or better in six of the 15 credit hours, and a grade of 'C' or better in the remaining nine credit hours.
Honours (Coop) <sup>2</sup>	60	3.25	No failures on entry <sup>1</sup> ; ENVR 2900; students must satisfy the requirements for Entrance/continuation in the regular program and (normally) have completed ENVR 1000, ENVR 2000, ENVR 2350, ENVR 3160, GEOG 1280 <sup>3</sup> and GEOG 1290 <sup>3</sup> , ECON 2390 (ABIZ 2390), STAT 1000 <sup>3</sup> , one of BIOL 2390 <sup>3</sup> (or AGECE 2370) (or BIOL 2300 <sup>3</sup> ), and one of BIOL 1010 <sup>3</sup> , (or BIOL 1030 <sup>3</sup> ).
Major	24	2.00	12 credit hours taken from ENVR 1000, ENVR 2000, BIOL 1010 <sup>2</sup> (or BIOL 1030 <sup>2</sup> ), STAT 1000 <sup>2</sup> , NATV 1220, GEOG 1280 <sup>3</sup> or GEOG 1290 <sup>3</sup> ; with a grade of 'C+' or better in six of the 12 credit hours, and a grade of 'C' or better in the remaining six credit hours.
Major (Coop) <sup>1</sup>	60	2.50	ENVR 2900; students must satisfy the requirements for continuation in the regular program and (normally) have completed ENVR 1000, ENVR 2000, ENVR 2350, ENVR 3160, GEOG 1280 <sup>3</sup> and GEOG 1290 <sup>3</sup> ; ECON 2390 (ABIZ 2390), STAT 1000 <sup>3</sup> , one of BIOL 2390 <sup>3</sup> (AGECE 2370) or BIOL 2300 <sup>3</sup> , and one



			of BIOL 1010 <sup>3</sup> (or BIOL 1030 <sup>3</sup> ).
General	48	2.00	

<sup>1</sup>Students may be permitted to enter the program without satisfying all requirements listed. Students should consult with a Student Advisor for further information.

<sup>2</sup>Students may be permitted to enter the program without satisfying all requirements listed. Students should consult with the [Cooperative Education](#) Coordinator for further information.

<sup>3</sup>Equivalent courses offered through Université de Saint-Boniface may be used in lieu of the specified course identified in the entrance requirements chart. Université de Saint-Boniface courses end in the number '1' (e.g. GEOG 1281).

### 7.3 Minimum Performance Requirements for Continuation and Graduation

A student's academic performance will be assessed with his/her application for admission to the Clayton H. Riddell Faculty of Environment, Earth, and Resources and following each *term* thereafter. A Riddell Faculty student advisor must approve a student's registration each Fall/Winter and Summer term. Any revisions to this schedule should also be approved prior to the end of the registration revision period.

To be in **good standing** and permitted to continue in a degree program, a student must achieve the minimum standards outlined in [section 7.3.1](#) at each point of assessment. This assessment is based on the student's minimum degree Grade Point Average and the number of failed courses after admission to the Riddell Faculty.

To graduate from either a Bachelor of Environmental Science or the Bachelor of Environmental Studies with the intended degree designation, a student must achieve the minimum standards and graduation requirements outlined in [section 7.3.1](#) following the final term of registration and satisfy all degree course requirements in the foundation,

environment core and Focus Area as defined in [section 7.1](#) of this *Chapter*. In addition, students must satisfy the residence requirement by completing either a total of 48 credit hours or their last 24 credit hours at the University of Manitoba. These courses must be acceptable for credit in either the Bachelor of Environmental Science or the Bachelor of Environmental Studies.

Students who do not meet these minimum performance requirements for continuation or graduation will be required to transfer to the appropriate program based on their performance and eligibility as defined in 7.3.1. Students who do not meet the minimum performance requirements for the General degree program will be placed on probation or academic suspension as defined in [section 3.14 Academic Warning, Probation and Academic Suspension \(Academic Standing\)](#) in this *Chapter*.

Students required to withdraw from the Honours degree program will have the statement 'Required to Withdraw from the Honours Program' recorded on their transcript of marks. Similarly, students required to withdraw out of the Major degree program will have the statement 'Required to Withdraw from the Major Program' recorded on their transcript of marks.

#### 7.3.1 Minimum Performance Requirements

Degree Program (Credit Hours)	Minimum Performance Requirements			Additional Graduation Requirements <sup>1</sup>	
	Minimum Degree Grade Point Average (DGPA)	Maximum Credit Hours of Failures	Focus Area	Minimum credit hours of course work completed at the 3000- and 4000-levels	Coop Option Courses
General (90)	2.00	48	9 credit hours		
Major (120)	2.00	18	33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 2.00.	33 credit hours	
Major (Coop) (120)	2.50	18	33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 2.00.	33 credit hours	ENVR 2900, ENVR 3900, ENVR 3910, ENVR 3980, ENVR 3920, ENVR 3990; (ENVR 4910 and ENVR 4980 are optional)
Honours (120)	3.25	18	33 credit hours of which 21 must be at the 3000- or 4000-level; minimum	39 credit hours	



			cumulative GPA of 3.00; minimum 'C+' grade in each course.		
Honours (Coop)  (120)	3.25	18	33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 3.00; minimum 'C+' grade in each course.	39 credit hours	ENVR 2900, ENVR 3900, ENVR 3910, ENVR 3980, ENVR 3920, ENVR 3990; (ENVR 4910 and ENVR 4980 are optional)
*Students must satisfy the residence requirement for the degree program in order to be eligible for graduation. This is defined as either a total of 48 or the last 24 credit hours at the University of Manitoba.					

#### 7.4 Graduating with Distinction or First Class Honours

Students graduating with a Bachelor of Environmental Science (General) or Bachelor of Environmental Studies (General) degree will have their degree granted 'With Distinction' if they have a minimum Degree Grade Point Average of 3.50 on all course work.

Students graduating with a Bachelor of Environmental Science (Major) or Bachelor of Environmental Studies (Major) degree will have their degree granted 'With Distinction' if they have a minimum Degree Grade Point Average of 3.50 on all course work.

The term Degree with Distinction will appear both on the parchment and on the student's transcript of marks.

#### First Class Honours

Students in the Honours program will have their degree granted with 'First Class Honours' if they have a minimum Degree Point Average of 3.50 based on all acceptable course work. The term First Class Honours will appear both on the parchment and on the student's transcript of marks.

#### 7.5 Bachelor of Environmental Science Program Chart

7.5 Bachelor of Environmental Science <sup>1,2</sup>			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS 120 CREDIT HOURS</b>			
ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, MATH 1500 <sup>3</sup> , STAT 1000, ECON 1010  Plus 3 credit hours from the Faculty of Arts <sup>4</sup>	ENVR 2270 <sup>8</sup> , ENVR 3160 <sup>9</sup> , BIOL 2300 (or AGECE 2370), ECON 2390 (ABIZ 2390), PHYS 1020 <sup>5</sup> , STAT 2000  One of PHYS 1030 <sup>5</sup> , MATH 1200, MATH 1300 <sup>6</sup> , MATH 1700 <sup>6</sup>  One of GEOG 1290 or GEOL 1340 (or GEOL 1440)	ENVR 4110, ENVR 4500  Plus 33 credit hours in an approved <a href="#">Focus Area</a> <sup>7</sup>	
It is recommended that students complete the W course in University 1 or Year 2			
<b>HONOURS COOPERATIVE OPTION 120 CREDIT HOURS</b>			
ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, MATH 1500 <sup>3</sup> , STAT 1000, ECON 1010  Plus 3 credit hours from the Faculty of Arts <sup>4</sup>	ENVR 2270 <sup>8</sup> , ENVR 3160 <sup>9</sup> , BIOL 2300 (or AGECE 2370), ECON 2390 (ABIZ 2390), PHYS 1020 <sup>5</sup> , STAT 2000, ENVR 2900  One of PHYS 1050 <sup>5</sup> , MATH 1200, MATH 1300 <sup>6</sup> , MATH 1700 <sup>6</sup>  One of GEOG 1290 or GEOL 1340 (or GEOL 1440)	ENVR 4110, ENVR 4500  Plus 33 credit hours in an approved <a href="#">Focus Area</a> <sup>7</sup>  ENVR 3900, ENVR 3980, ENVR 3990, ENVR 3910, ENVR 3920 (ENVR 4980 and ENVR 4910 are optional)	
It is recommended that students complete the W course in University 1 or Year 2			
<b>MAJOR 120 CREDIT HOURS</b>			



ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, MATH 1500 <sup>3</sup> , STAT 1000, ECON 1010  Plus 3 credit hours from the Faculty of Arts <sup>4</sup>	ENVR 2270 <sup>8</sup> , ENVR 3160 <sup>9</sup> , BIOL 2300 (or AGECE 2370), ECON 2390 (ABIZ 2390), PHYS 1020 <sup>5</sup> , STAT 2000  One of PHYS 1030 <sup>5</sup> , MATH 1200, MATH 1300 <sup>6</sup> , MATH 1700 <sup>6</sup>  One of GEOG 1290 or GEOL 1340 (or GEOL 1440)	ENVR 4110  Plus 33 credit hours in an approved <a href="#">Focus Area</a> <sup>7</sup>
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It is recommended that students complete the W course in University 1 or Year 2

**MAJOR COOPERATIVE OPTION 120 CREDIT HOURS**

ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, MATH 1500 <sup>3</sup> , STAT 1000, ECON 1010  Plus 3 credit hours from the Faculty of Arts <sup>4</sup>	ENVR 2270 <sup>8</sup> , ENVR 3160 <sup>9</sup> , BIOL 2300 (or AGECE 2370), ECON 2390 (ABIZ 2390), PHYS 1020 <sup>5</sup> , STAT 2000, ENVR 2900  One of PHYS 1030 <sup>5</sup> , MATH 1200, MATH 1300 <sup>6</sup> , MATH 1700 <sup>6</sup>  One of GEOG 1290 or GEOL 1340 (or GEOL 1440)	ENVR 4110  Plus 33 credit hours in an approved <a href="#">Focus Area</a> <sup>7</sup>  ENVR 3900, ENVR 3980, ENVR 3990, ENVR 3910, ENVR 3920 (ENVR 4980 and ENVR 4910 are optional)
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It is recommended that students complete the W course in University 1 or Year 2

**GENERAL 90 CREDIT HOURS**

ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, MATH 1500 <sup>3</sup> , STAT 1000, ECON 1010  Plus 3 credit hours from the Faculty of Arts <sup>4</sup>	ENVR 2270 <sup>8</sup> , ENVR 3160 <sup>9</sup> , BIOL 2300 (or AGECE 2370), ECON 2390 (ABIZ 2390), PHYS 1020 <sup>5</sup> , STAT 2000  One of PHYS 1030 <sup>5</sup> , MATH 1200, MATH 1300 <sup>6</sup> , MATH 1700 <sup>6</sup>  One of GEOG 1290 or GEOL 1340 (or GEOL 1440)	ENVR 4110  Plus 9 credit hours in an approved <a href="#">Focus Area</a>
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**MINOR 18 CREDIT HOURS**

ENVR 1000, ENVR 2000	12 credit hours of ENVR courses number at the 2000-level or above.
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**NOTES:**

- <sup>1</sup>Entrance into the degree programs is summarized in [section 7.2.1](#) of this *Chapter*.
- <sup>2</sup>The courses required in this program will satisfy the university mathematics requirements.
- <sup>3</sup>MATH 1510 or MATH 1520 may be taken in place of MATH 1500 (or equivalent).
- <sup>4</sup>It is recommended that students consider a selection from List A below when selecting courses from the Faculty of Arts.
- <sup>5</sup>PHYS 1050 and PHYS 1070 may be used in lieu of PHYS 1020 and PHYS 1030, respectively.
- <sup>6</sup>MATH 1310 and MATH 1710 may be taken in place of MATH 1300 and MATH 1700 (or equivalent), respectively.
- <sup>7</sup>Focus Area courses must include a minimum of 21 credit hours at the 3000- and/or 4000-level. Focus Area performance requirements are defined in [section 7.3](#) of this *Chapter*. Information on Focus Areas is available in the [Focus Area Brochure](#).
- <sup>8</sup>ENVR 2170 may be used in lieu of ENVR 2270.
- <sup>9</sup>ENVR 2650 may be used in lieu of ENVR 3160.

**IMPORTANT:** The Honours and Major programs need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.

**NOTE:**

- To fulfil prerequisite requirements, a grade of 'C' must be achieved, unless otherwise stated, in any course stipulated as a prerequisite to a further course.
- Students should review the current course topics available through *ENVR 2010* (1.5), *ENVR 2020* (3), *ENVR 3000* (3), *ENVR 3010* (1.5), *ENVR 3020* (3), *ENVR 4000* (3), *ENVR 4010* (1.5), and *ENVR 4020* (3) as well as those offered through *GEOG 3740* (6), *GEOG 3750* (3), *GEOG 3760* (6), *GEOG 3770* (3) and *GEOG 4670* (3). Also, all courses are not offered every year or every term. The course schedule for the current academic term is available from the [Class Schedule](#).
- Students registering in certain courses may be required to participate in field trips or field components and pay a portion of



- the associated expenses. For details, contact the [Department of Environment and Geography general office](#).
- Equivalent courses offered through Université de Saint-Boniface may be used in lieu of the specified course identified in the program requirements chart. Université de Saint-Boniface courses end in the number '1' (e.g. CHEM 1301).

### 7.6 Bachelor of Environmental Studies Program Chart

7.6 Bachelor of Environmental Studies <sup>1,2</sup>			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS 120 CREDIT HOURS</b>			
ENVR 1000, ENVR 2000, GEOG 1280 <sup>3</sup> , GEOG 1290 <sup>3</sup> , NATV 1220 <sup>4</sup> , BIOL 1010 <sup>5</sup> , STAT 1000, ECON 1010	ENVR 2350, ENVR 3160 <sup>8</sup> , ECON 2390 (ABIZ 2390), BIOL 2390 <sup>5</sup>  Plus 3 credit hours from List B <sup>6</sup>	GEOG 3810 <sup>9</sup> , ENVR 4110, ENVR 4500  Plus 33 credit hours in an approved <a href="#">Focus Area</a> <sup>7</sup>	
It is recommended that students complete the <a href="#">W course</a> in University 1 or Year 2			
<b>HONOURS COOPERATIVE OPTION 120 CREDIT HOURS</b>			
ENVR 1000, ENVR 2000, GEOG 1280 <sup>3</sup> , GEOG 1290 <sup>3</sup> , NATV 1220 <sup>4</sup> , BIOL 1010 <sup>5</sup> , STAT 1000, ECON 1010	ENVR 2350, ENVR 3160 <sup>8</sup> , ECON 2390 (ABIZ 2390), BIOL 2390 <sup>5</sup> , ENVR 2900  Plus 3 credit hours from List B <sup>6</sup>	GEOG 3810 <sup>9</sup> , ENVR 4110, ENVR 4500  Plus 33 credit hours in an approved <a href="#">Focus Area</a> <sup>7</sup>  ENVR 3900, ENVR 3910, ENVR 3920, ENVR 3980, ENVR 3990 (ENVR 4980 and ENVR 4910 are optional)	
It is recommended that students complete the <a href="#">W course</a> in University 1 or Year 2			
<b>MAJOR 120 CREDIT HOURS</b>			
ENVR 1000, ENVR 2000, GEOG 1280 <sup>3</sup> , GEOG 1290 <sup>3</sup> , NATV 1220 <sup>4</sup> , BIOL 1010 <sup>5</sup> , STAT 1000, ECON 1010	ENVR 2350, ENVR 3160 <sup>8</sup> , ECON 2390 (ABIZ 2390), BIOL 2390 <sup>5</sup>  Plus 3 credit hours from List B <sup>6</sup>	GEOG 3810 <sup>9</sup> , ENVR 4110  Plus 33 credit hours in an approved <a href="#">Focus Area</a> <sup>7</sup>	
It is recommended that students complete the <a href="#">W course</a> in University 1 or Year 2			
<b>MAJOR COOPERATIVE OPTION 120 CREDIT HOURS</b>			
ENVR 1000, ENVR 2000, GEOG 1280 <sup>3</sup> , GEOG 1290 <sup>3</sup> , NATV 1220 <sup>4</sup> , BIOL 1010 <sup>5</sup> , STAT 1000, ECON 1010	ENVR 2350, ENVR 3160 <sup>8</sup> , ECON 2390 (ABIZ 2390), BIOL 2390 <sup>5</sup> , ENVR 2900  Plus 3 credit hours from List B <sup>6</sup>	GEOG 3810 <sup>9</sup> , ENVR 4110  Plus 33 credit hours in an approved <a href="#">Focus Area</a> <sup>7</sup>  ENVR 3900, ENVR 3910, ENVR 3920, ENVR 3980, ENVR 3990 (ENVR 4980 and ENVR 4910 are optional)	
It is recommended that students complete the <a href="#">W course</a> in University 1 or Year 2			
<b>GENERAL 90 CREDIT HOURS</b>			
ENVR 1000, ENVR 2000, GEOG 1280 <sup>3</sup> , GEOG 1290 <sup>3</sup> , NATV 1220 <sup>4</sup> , BIOL 1010 <sup>5</sup> ,	ENVR 2350, ENVR 3160 <sup>8</sup> , ECON	GEOG 3810 <sup>9</sup> , ENVR 4110	



STAT 1000, ECON 1010	2390 (ABIZ 2390), BIOL 2390 <sup>5</sup> Plus 3 credit hours from List B <sup>6</sup>	Plus 9 credit hours in an approved <a href="#">Focus Area</a>
<b>MINOR 18 CREDIT HOURS</b>		
ENVR 1000, ENVR 2000	12 credit hours of ENVR courses numbered at the 2000-level or above.	
<p><b>NOTES:</b></p> <p><sup>1</sup>Entrance into the degree programs is summarized in <a href="#">7.2.2</a>.</p> <p><sup>2</sup>The courses required in this program will satisfy the <a href="#">university mathematics requirements</a>.</p> <p><sup>3</sup>GEOG 1281 and GEOG 1291 may be used in lieu of GEOG 1280 and GEOG 1290.</p> <p><sup>4</sup>Students are permitted to substitute NATV 1220 with another 3 credit hours from the department (not a language) or approved alternative course. See the <a href="#">Riddell Faculty student advisor</a> for assistance.</p> <p><sup>5</sup>Students with an interest in the Conservation and Biodiversity Focus Area are advised to complete the combination of BIOL 1020 and BIOL 1030 as well as BIOL 2300 (or AGEC 2370) instead of BIOL 1010 and BIOL 2390.</p> <p><sup>6</sup>Students must complete 3 credit hours of course work containing significant international content. Students are referred to List B for a list of available courses. Students may substitute with another course as approved by the student advisor.</p> <p><sup>7</sup>Focus Area courses must include a minimum of 21 credit hours at the 3000- and/or 4000-level. Focus Area performance requirements are defined in <a href="#">section 7.3</a> of this <i>Chapter</i>. Information on Focus Areas is available in the <a href="#">Focus Area Brochure</a>.</p> <p><sup>8</sup>ENVR 2650 may be used in lieu of ENVR 3160.</p> <p><sup>9</sup>GEOG 3680 may be used in lieu of GEOG 3810.</p> <p><b>IMPORTANT:</b> The Honours and Major programs need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>To fulfil prerequisite requirements, a grade of 'C' must be achieved, unless otherwise stated, in any course stipulated as a prerequisite to a further course.</li> <li>Students should review the current course topics available through <i>ENVR 2010</i> (1.5), <i>ENVR 2020</i> (3), <i>ENVR 3010</i> (1.5), <i>ENVR 3020</i> (3), <i>ENVR 4000</i> (3), <i>ENVR 4010</i> (1.5), and <i>ENVR 4020</i> (3) as well as those offered through <i>GEOG 3740</i> (6), <i>GEOG 3750</i> (3), <i>GEOG 3760</i> (6), <i>GEOG 3770</i> (3) and <i>GEOG 4670</i> (3). Also, all courses are not offered every year or every term. The course schedule for the current academic term is available from the <a href="#">Class Schedule</a>.</li> <li>Students registering in certain courses may be required to participate in field trips or field components and pay a portion of the associated expenses. For details, contact the <a href="#">Department of Environment and Geography general office</a>.</li> <li>Equivalent courses offered through Université de Saint-Boniface may be used in lieu of the specified course identified in the entrance requirements chart. Université de Saint-Boniface courses end in the number '1' (e.g. GEOG 1281).</li> </ul>		

**List A:** Recommended List of Faculty of Arts Electives. Students may wish to consider courses from the following list when identifying appropriate selections from the Faculty of Arts.

ANTH 1210 Human Origins and Antiquity Cr.Hrs.3

ANTH 1220 Cultural Anthropology Cr.Hrs.3

ANTH 1520 Critical Cultural Anthropology Cr.Hrs.3

ECON 1020 Introduction to Macroeconomic Principles Cr.Hrs. 3

NATV 1200 The Native Peoples of Canada Cr.Hrs.6

NATV 1240 The Native Peoples of Canada, Part 2 Cr.Hrs.3

PHIL 1200 Introduction to Philosophy Cr.Hrs.6

PHIL 1290 Critical Thinking Cr.Hrs.3

PHIL 1320 Introductory Logic Cr.Hrs.6

PHIL 1510 Historical Introduction to Philosophy Cr.Hrs.6



RLGN 1420 Ethics in World Religions Cr.Hrs.3

RLGN 2180 Theory of Nature Cr.Hrs.3

**List B:** Courses containing significant international content:

ABIZ 1010 Economics of World Issues and Policies Cr.Hrs.3

ECON 2550 Political Economy 2: Economic Growth and Fluctuations in a Global Economic Environment Cr.Hrs.3

ECON 3670 International Trade Cr.Hrs.3

POLS 2040 Introduction to International Relations Cr.Hrs.6

POLS 3220 Globalization and the World Economy Cr.Hrs.3

POLS 3250 International Political Economy Cr.Hrs.3

GEOG 4260 Sacred Lands Cr.Hrs.3

or as approved by a [Riddell Faculty student advisor](#)

## 7.7 Environment, Earth, and Resources - 1000 Level

**EER 1000** Earth: A User's Guide Cr.Hrs.3

This course will present a multi-disciplinary introduction to the Planet Earth as both the source of essential resources and as the site of resulting negative impacts. Focus in the course will be provided by addressing important and current topics, case studies, and concepts that the well-educated citizen of the Earth should understand and will include natural and human-induced processes within a broad range of spatial and temporal scales.

## 7.8 Environmental Science and Environmental Studies -1000 Level

**ENVR 1000** Environmental Science 1 - Concepts Cr.Hrs.3 (Formerly 128.100) This course will introduce students to the conceptual framework of the environment by examining its physical, biological, and social components. General topics to be considered will include ecological principles and the responses of natural and managed systems to disturbance; population growth; biodiversity and conservation; and environmental sustainability. Not to be held with BIOL 1340 (071.134)

## 7.8 Environmental Science and Environmental Studies -2000 Level

**ENVR 2000** Environmental Science 2 - Issues Cr.Hrs.3 (Formerly 128.200) This course will briefly review the major features of the structure and function of natural systems along with the degree to which these have been

compromised. The main component of the course, however, will concentrate on the identification of the issues that underlie environmental degradation, while exploring alternative conditions that have the potential to reverse current trends and ultimately contribute to ecological sustainability. Prerequisite: ENVR 1000 (128.100) (C).

**ENVR 2010** Field Topics in Environment Cr.Hrs.1.5  
Field and practical experience in selected topics of current interest in the Environmental Science and Studies, with the content to vary depending on the needs of students and faculty. Prerequisite: Permission of department head.

**ENVR 2020** Extended Field Topics in Environment Cr.Hrs.3  
Field and practical experience in selected topics of current interest in the Environmental Science and Studies, with the content to vary depending on the needs of students and faculty. Prerequisite: Permission of department head.

**ENVR 2180** Introductory Toxicology Cr.Hrs.3  
(Formerly 128.218) A survey of general principles underlying the effects of toxic substances on biological systems, including consideration of the history, scope and applications of toxicology, the mechanisms of toxic action, and some major types of toxicants. Not to be held with ENVR 2190 (128.219) or BIOL 2380 (BOTN 2180 or 001.218 or ZOOL 2180 or 022.218) or BIOL 2382 (BOTN 2190 or 001.219 or ZOOL 2190 or 022.219) or AGRI 2180 (065.218) or AGRI 2190 (065.219). Prerequisites: [BIOL 1030 or BIOL 1031 or (071.125) (C)], and [(CHEM 1310 or CHEM 1311 (002.131) (C), or CHEM 1320 (002.132) (C)].

**ENVR 2190** Toxicological Principles Cr.Hrs.1.5  
(Formerly 128.219) A survey of general principles underlying the effects of toxic substances on biological systems, including consideration of the history, scope and applications of toxicology, and the mechanisms of toxic action. Not to be held with ENVR 2180 (128.218) or BIOL 2380 (BOTN 2180



or 001.218 or ZOOL 2180 or 022.218), or BIOL 2382 (BOTN 2190 or 001.219 or ZOOL 2190 or 022.219), or AGRI 2180 (065.218), or AGRI 2190 (065.219). Prerequisites: [BIOL 1030 or BIOL 1031 or (071.125) (C)], and [CHEM 1310 or CHEM 1311 (002.131) (C), or CHEM 1320 (002.132) (C)].

**ENVR 2270** Environmental Problem Solving and Scientific Thinking Cr.Hrs.3

A course to help students develop skeptical and scientific thinking around environmental issues and problems. A multi-disciplinary approach will be taken, using current topical issues as examples. Not to be held with (ENVR 2170 or 128.217). Prerequisites: [CHEM 1310 or CHEM 1311 (002.131) (C)] and [BIOL 1030 or BIOL 1031 or (071.125) (C)].

**ENVR 2350** Technical Communication in the Environmental Sectors Cr.Hrs.3

(Lab Required) (Formerly 128.235) An introduction to technical communication skills required for environmental practitioners in research, government, and industry. The course covers technical writing and literature search techniques, business writing including reports, memos and e-mails, professional presentation skills, and fundamental internet skills. Practical experience is gained through assignments and laboratory exercises. Not to be held for credit with (128.205). Prerequisite: ENVR 1000 (128.100) or BIOL 1340 (071.134) (C), or permission of department head.

**ENVR 2550** Environmental Chemistry Cr.Hrs.3

(Lab Required) (Formerly 128.255) An introduction to the chemistry of the environment. Emphasis will be on the composition of the natural environment and the processes of natural and human-introduced chemical species that take place within it. The course will provide students with the chemical basis for understanding the environment and environmental problems. Not to be held with CHEM 2550 (002.255). Prerequisite: CHEM 1310 or CHEM 1311 (002.131) (C).

**ENVR 2900** Professional Development in the Environmental Sectors 1 Cr.Hrs.1.5

(Formerly 128.290) Through self directed learning students are introduced to the environmental sectors and issues including workplace health and safety, the respectful workplace, managing workloads and expectation, and professionalism. The course is a mandatory requirement to Cooperative Education Option admission. Prerequisite: 30 credit hours of university credit.

## 7.8 Environmental Science and

### Environmental Studies -3000 Level

**ENVR 3000** Multidisciplinary Topics in Environmental Science 1 Cr.Hrs.3

(Formerly 128.300) Selected topics of current interest in the Environmental Sciences and Studies. Course content to vary with each offering depending on the needs and interests of students and faculty. Prerequisites: Permission of department head, and 60 credit hours of university credit.

**ENVR 3010** Field Topics in Environmental Science 1 Cr.Hrs.1.5

(Formerly 128.301) Field and practical experience in selected topics of current interest in the Environmental Sciences and Studies, with the content to vary depending on

the needs and interests of students and faculty. Prerequisite: Permission of department head.

**ENVR 3020** Extended Field Topics in Environmental Science 1 Cr.Hrs.3

(Formerly 128.302) Field and practical experience in selected topics of current interest in the Environmental Sciences and Studies, with the content to vary depending on the needs and interests of students and faculty. Prerequisite: Permission of department head.

**ENVR 3110** Environmental Conservation and Restoration Cr.Hrs.3

(Lab Required) (Formerly 128.311) Environmental conservation and restoration are introduced and approaches based on science and traditional knowledge are contrasted. An emphasis is placed on systems thinking and both local and international case studies. Not to be held with (128.310). Prerequisites: BIOL 2390 (BOTN 2280 or 001.228 or ZOOL 2290 or 022.229) (C), or BIOL 2300 (BOTN 2370 or BOTN 2371 or 001.237 or ZOOL 2370 or ZOOL 2371 or 022.237) (C), or AGECE 2370 (065.237) (C), or permission of department head.

**ENVR 3160** Environmental Responsibilities and the Law Cr.Hrs.3

Environmental responsibilities and their legal framework in terms of policies, legislation, standards and guidelines and the tools to manage responsibility are examined through lectures, case study review and discussion. Environmental liability and due diligence are reviewed in relation to responsibilities of organizations and individuals. Strategies to manage environmental liabilities, including environmental and risk assessment, are also discussed. Not to be held with (ENVR 3150 or 128.315 or ENVR 2650) or ABIZ 3550. Prerequisite: a minimum grade of C in ENVR 2000, or permission of department head.

**ENVR 3180** Methods in Ecotoxicology Cr.Hrs.3

(Lab Required) This is a laboratory-based course exploring the development, conduction and application of bioassays, biomarkers, bioindicators and biomonitors in ecotoxicology. Through a laboratory setting, students learn how to perform standard bioassays for a variety of species (plants and invertebrates) as well as systems (aquatic and terrestrial) at different levels of biological organization, from the individual to the ecosystem. Not to be held with (ENVR 3300). Prerequisites: a minimum grade of C in each of ENVR 2180 or BIOL 2380 (BOTN 2180, ZOOL 2180) or AGRI 2180, and a second year course in the Faculty of Science or the Faculty of Agricultural and Food Sciences that has a laboratory component, or permission of department head.

**ENVR 3250** Environmental Assessment Cr.Hrs.3

(Lab Required) (Formerly 128.325) The theory, principles and practices of environmental assessment as a planning and decision-making process to identify and mitigate adverse effects of development projects. Environmental assessment is defined in the context of federal and provincial legislation, and applicable standards and guidelines. Laboratory assignments involve practical experiences, case study review and basic report preparation. Prerequisites: [ABIZ 3550 (061.355) (C) or ENVR 3160 or (ENVR 3150 or 128.315) (C)], and [BIOL 2300 (BOTN 2370 or BOTN 2371 or 001.237 or ZOOL 2370 or ZOOL 2371 or 022.237) (C), or AGECE 2370 (065.237) (C)], or permission of



department head.

**ENVR 3340** Circumpolar Cultures and Lifestyles Cr.Hrs.3

This course provides an introduction to the culture, lifestyles, belief systems, material culture, art, environmental issues, and politics of Aboriginal Peoples in northern Canada, Greenland, Alaska, Siberia and Scandinavia. Prerequisite: Permission of department head.

**ENVR 3350** Environmental Management Systems Cr.Hrs.3

(Formerly 128.335) This course provides an introduction to environmental management systems and specific material on the ISO 14001 international EMS standard. Auditing principles and techniques are described with specific guidance on auditing an ISO 14001 EMS. Prerequisite: Permission of department head.

**ENVR 3400** Introduction to Environment and Health Cr.Hrs.3

(Formerly 128.340) An overview of the linkages between human health and environmental issues. The course discusses the nature of environmental hazards, human exposure and health outcomes. Major environmental and human health issues such as air pollution, hazardous substances, endocrine disruptors and products in the home are covered. Not to be held with (128.421). Prerequisite: 60 credit hours of university credit.

**ENVR 3500** Project in Environmental Science Cr.Hrs.3

(Formerly 128.350) A research project in any aspect of environmental science, chosen in consultation with the department head and an appropriate supervising faculty member. Written reports and oral presentation on the results of the project will be required. The course is normally available only to final year students in the Environmental Science or Studies Program. Prerequisite: Permission of department head.

**ENVR 3550** Environmental Analysis Cr.Hrs.3

(Lab Required) (Formerly 128.355) An introduction to classical and modern techniques for sampling, sample pre-treatment, and analysis of chemical substances in aquatic atmospheric and terrestrial environments and the interpretation of data obtained from such analyses. Not to be held with CHEM 3590 or (002.347) or (002.355). Prerequisite: ENVR 2550 (128.255) (C), or CHEM 2550 (002.255) (C), or CHEM 2470 (002.247) (C), or permission of department head.

**ENVR 3750** Green Building and Planning Cr.Hrs.3

An overview of the concepts and tools of Green building design and Green Planning. The course covers the history and trends in Green Building and Planning, related policies, tools and techniques. There is a strong emphasis on learning from local case-studies through seminars and field trips. Prerequisite: ENVR 2000 and 57 credit hours, or permission of department head.

**ENVR 3850** Sustainable Manitoba (A) Cr.Hrs.3

This course approaches local sustainability issues from an interdisciplinary perspective. By looking at the ecological, social and economic aspects from a variety of discipline perspectives, a fuller understanding of sustainability is achieved. The broad range of perspectives is achieved through participation of guest speakers from other faculties and outside of the university as well as excursion outside the

classroom. Not to be held with GEOG 3850. Prerequisite: 60 credit hours of course work, or permission of department head.

**ENVR 3900** Professional Development in the Environmental Sectors 2 Cr.Hrs.1.5

(Formerly 128.390) Attendance and participation in seminars, conferences and workshops to foster greater interaction between students and practitioners in the environmental sectors. Students improve professional skill sets through assignments and mock interviews. The normal sequence for participation is after completion of ENVR 3980 (128.398). Prerequisites: ENVR 2900 (128.290) (C), and 60 credit hours of university credit.

**ENVR 3910** Coop Work Term Report 1 Cr.Hrs.1.5

(Formerly 128.391) Work term report, completed in conjunction with the coop placement, designed to integrate professional experiences with the concepts and theories explored through academic study. Students must be admitted into the Coop program to be registered, and receive credit. Prerequisite: ENVR 2900 (128.290) (C). Prerequisite or Concurrent Requirement: ENVR 3980 (128.398).

**ENVR 3920** Coop Work Term Report 2 Cr.Hrs.1.5

(Formerly 128.392) Work term report, completed in conjunction with the coop placement, designed to integrate professional experiences with the concepts and theories explored through academic study. Students must be admitted into the Coop program to be registered, and receive credit. Prerequisite: ENVR 3980 (128.398) (P). Prerequisites or Concurrent Requirements: ENVR 3900 (128.390), and ENVR 3990 (128.399).

**ENVR 3980** Coop Work Term 1 Cr.Hrs.0

(Formerly 128.398) Work assignments in business, industry, research or government for students registered in the Honours or Major Cooperative program. This course is graded pass/fail. Prerequisite: ENVR 2900 (128.290) (C).

**ENVR 3990** Coop Work Term 2 Cr.Hrs.0

(Formerly 128.399) Work assignments in business, industry, research or government for students registered in the Honours or Major Cooperative program. This course is graded pass/fail. Prerequisite or Concurrent Requirement: ENVR 3900 (128.390).

## 7.8 Environmental Science and

### Environmental Studies -4000 Level

**ENVR 4000** Multidisciplinary Topics in Environmental Science 2 Cr.Hrs.3

(Formerly 128.400) Selected topics of current interest in the Environmental Sciences and Studies. Course content to vary with each offering depending on the needs and interests of students and faculty. Prerequisites: Permission of department head, and 60 credit hours of university credit.

**ENVR 4010** Field Topics in Environmental Science 2 Cr.Hrs.1.5

(Formerly 128.401) Field and practical experience in selected topics of current interest in the Environmental Sciences and Studies, with the content to vary depending on the needs and interests of students and faculty. Prerequisite:



Permission of department head.

**ENVR 4020** Extended Field Topics in Environmental Science 2 Cr.Hrs.3  
(Formerly 128.402) Field and practical experience in selected topics of current interest in the Environmental Sciences and Studies, with the content to vary depending on the needs and interests of students and faculty. Prerequisite: Permission of department head.

**ENVR 4050** Ecosystem Management Cr.Hrs.3  
This course will provide students with an understanding of the practical applications of ecological science, environmental policy, and resource management approaches in the large-scale planning of landscapes. The course will review ecological principles and trace the historical development of the ecosystem concept. Comparisons are made to other possible environmental management approaches. The synthesis of major elements and concepts will be reinforced through case studies on the Manitoba landscape, with an emphasis on practical learning by students through field seminars and group discussions. Not to be held with GEOG 4050. Prerequisite: Permission of department head.

**ENVR 4060** Biogeography Cr.Hrs.3  
This course will provide students with a general understanding of the historical, ecological, analytical, and conservation aspects of biogeography. The course will also have a dual focus on the principles and concepts of reasons for the distribution of plants and animals worldwide, as well as incorporating discussion on as many local (Manitoba, Canada, North America) examples as possible. Not to be held with GEOG 4060. Prerequisite: Permission of department head.

**ENVR 4110** Critical Thinking and the Environment Cr.Hrs.3 (Lab Required) (Formerly 128.411) Topical issues and responses regarding the environment including conservation, management, and policy making are critically evaluated at local, national, and global scales. Term projects emphasizing applied work with environmental organizations and researchers are presented. Not to be held with (128.410 or 001.468). Prerequisites: ENVR 2000 (128.200) (C), and 72 credit hours of course work, or permission of department head.

**ENVR 4180** Ecotoxicological Risk Characterization Cr.Hrs.3  
A biologically based, advanced course that will give students working knowledge of current processes and techniques for ecotoxicological risk characterization. The course material will cover the topics of problem definition, dose response characterization, exposure characterization, risk assessment, and risk management decision making. Prerequisite: ENVR 2180 (128.218) (C), or BIOL 2380 (BOTN 2180 or 001.218 or ZOOL 2180 or 022.218) (C), or AGRI 2180 (065.218) (C).

**ENVR 4400** Advanced Issues in Environment and Health Cr.Hrs.3  
(Formerly 128.440) An evaluation of global and local environmental health issues and the assessment and management tools used to manage these risks. Case studies of environmental issues and their human health effects are covered. Students have the opportunity to work on a substantial interdisciplinary environmental health project. Not to be held with (128.422). Prerequisite: ENVR

3400 (128.340) (C).

**ENVR 4500** Thesis Project in Environmental Science and Studies Cr.Hrs.6  
(Formerly 128.450) A research thesis project in any aspect of environmental science or environmental studies, chosen in consultation with the course coordinator and an appropriate supervisor, typically a faculty member. Written reports and oral presentation on the results of the thesis project will be required. The course is normally available only to final year students in the Environmental Science Honours or Environmental Studies Honours Program. Prerequisites: Permission of course coordinator, and a GPA of 3.00 in the last 30 credit hours.

**ENVR 4550** Aquatic Chemistry Cr.Hrs.3  
(Formerly 128.455) An examination of biogeochemical processes affecting the distribution, speciation and bioavailability of chemical substances in the aquatic environment. The theoretical basis for the chemical behaviour of natural water systems is discussed, as well as the description of the processes involved in wastewater treatment. Not to be held with CHEM 4550 (002.455). Prerequisite: ENVR 3550 (128.355) (C), or (002.355) (C), or CHEM 3590 (C), or (002.347) (C), or permission of department head.

**ENVR 4650** Advanced Issues in Environmental Law and Policy Cr.Hrs.3  
This course provides an in-depth review of Canadian law and policy relating to environmental protection and management. In particular, the course describes the laws governing a variety of topics related to the environment, including constitutional responsibilities, federal and provincial environmental legislation, water law, parks and protected areas, wildlife and fisheries management, species at risk, and international law including climate change. Prerequisite: a minimum grade of C in ENVR 3160 (or the former ENVR 2650), or permission of department head.

**ENVR 4910** Coop Work Term Report 3 Cr.Hrs.1.5  
(Formerly 128.491) Work term report, completed in conjunction with the coop placement, which is designed to integrate professional experiences with the concepts and theories explored through academic study. Students must be admitted into the Coop program to be registered, and receive credit. Prerequisite: ENVR 3990 (128.399) (P).

**ENVR 4980** Work Term 3 Cr.Hrs.0  
(Formerly 128.498) Work assignments in business, industry, research or government for students registered in the Honours or Major Cooperative program. This course is graded pass/fail. Prerequisite: ENVR 3990 (128.399) (P).

## SECTION 8: Department of Geological Sciences: Bachelor of Science in Geological Sciences - Geology, Geophysics, and General Degree Regulations, Program Descriptions and Courses Offered



## by

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## SECTION 8: Department of Geological Sciences

### 8.1 Academic Staff

Please refer to the Clayton H. Riddell Faculty of Environment, Earth, and Resources website at: [umanitoba.ca/environment/about/academic\\_staff.html](http://umanitoba.ca/environment/about/academic_staff.html)

### 8.2 Program Information

The Geological Sciences deal with the history of the Earth and its life, especially that which is recorded in rocks. Different component parts of the Earth system, the *lithosphere*, *biosphere*, *atmosphere* and *hydrosphere*, operate at different length and time scales. During interactions between the spheres there is feedback between the component parts as energy and mass are exchanged, transferred and redistributed. In a geological context, the feedback can occur on a global scale, or on very small scales such as that which we see in minerals. More recently humans have become a major force in this Earth system because we have intervened in many of these exchanges.

Considering the Earth's past, geoscientists typically work with long time scales (in the order of millions to billions of years). We also use Hutton's original philosophy of *uniformitarianism*, stated as *the present is the key to the past*, to solve geological problems. However, as we see changes at the Earth's surface (our environment) occurring on very short time scales we need to learn to extract the signal of human activity from the Earth's pre-human past. Once we understand and quantify the nature and extent of the Earth's natural evolution as well as our more recent environmental impact, geological sciences can help predict future changes to the Earth.

Geology and Geophysics are the sciences that provide the quantitative data on the physical and chemical behaviour and characteristics of Earth materials - rocks, minerals, fluids and gases. These data are needed to model the behaviour of minerals in natural as well as many industrial systems. The theoretical and instrumental expertise needed to tackle many resource extraction, mineral processing and environmental problems is resident in geological science departments. From a broad Earth, environmental and resource perspective our collective future will depend on sustainable use of our Earth's resources and care of the environment.

The three-year General program (comprising of 90 credit hours) in Geological Sciences is designed to give students a basic understanding of the discipline in combination with a concentration of courses in a second subject area. The General Program is not intended for those students who seek a career in the geosciences. Rather, it is a useful consideration for students planning to enter the Bachelor of Education program (see the [Faculty of Education](#) in this calendar) or other programs that require an undergraduate degree for admission. Students intending to pursue a career in the geosciences or graduate study should hold an Honours or Major degree (comprising at least 120 credit hours) in Geology or Geophysics.

### Professional Registration

The professional practice of geoscience in Canada is governed by provincial/territorial law and is regulated by professional geoscience associations. In Manitoba, the Association of Professional Engineers and Geoscientists (APEGM) regulates professional practice. The requirements for professional registration are acceptable academic preparation and a subsequent period of acceptable geoscience experience. Students considering professional registration should take the B.Sc. Geological Sciences Honours or Major degree *and* make appropriate course selections, particularly in the basic sciences. Students should consult with the Department of Geological Sciences. Graduates who do not meet the academic requirements may be required by the professional association to take additional courses or examinations. Current registration information for APEGM is available in the department or from the association's web site: [www.apegm.mb.ca](http://www.apegm.mb.ca)

### Geological Sciences Prerequisite Information

To fulfil prerequisite requirements, a grade of 'C' must be achieved in any course stipulated as a prerequisite to a further course in Geological Sciences.

### 8.3 Degree Regulations

#### 8.3.1 B.Sc. in Geological Sciences (Major) Geology or Geophysics

To qualify for the degree, a student must complete a minimum of 120 credit hours with passing grades ('D' or better) in each course and with a minimum degree grade point average of 2.30 as indicated in the Graduation Requirements Table (see [section 8.3.5](#)). Students must complete all Faculty requirements as well as the [University Written English and Mathematics requirement](#) as described in the *Chapter, General Academic Regulations*, in this *Calendar*.

Students admitted to the Major program will normally have completed University 1 requirements, which include six credit hours of courses from the Faculty of Arts, six credit hours of courses from the Faculty of Science and six credit hours from either the Clayton H. Riddell Faculty of Environment, Earth, and Resources, the Faculty of Arts or the Faculty of Science. Students who do not meet this



requirement while in University 1 must do so within the Major program.

### Minor in Another Department

Students in the B.Sc. Geological Sciences have the opportunity to complete a Minor in a subject field that is different than that of the declared major, and which normally consist of 18 credit hours from a department offering this option at the University of Manitoba. Students in the B.Sc. Geological Sciences are not permitted to complete a Minor in Geological Sciences. The Minor requirements are described in [section 3.2](#) of this *Chapter*. Contact the department and/or a [Riddell Faculty student advisor](#) in the Faculty general office for further information about eligible Minors.

### Entrance to the Major

To enter a Major program in Geology or Geophysics, a student must have completed at least 24 credit hours with a minimum Degree Grade Point Average of 2.50 as stipulated in Entrance and Continuation Requirements Table (see [section 8.3.4](#)). In addition, the student must attain the minimum grade requirements specified for individual Year 1 courses according to the program tables for the Major in Geology ([section 8.4](#)) or the Major in Geophysics (see [section 8.5](#)). Students who do not obtain the entrance requirements for the Major program in their first year but who are interested in obtaining the Major degree should consult with the [department](#).

### Continuation in the Major

A student's academic performance is assessed first with his/her application for admission to the Riddell Faculty and then following each *term* in which the student is registered. To be in **good standing** and permitted to continue in the degree program, a student must maintain a minimum degree Grade Point Average of 2.30 as stipulated in the Entrance and Continuation Requirements Table ([section 8.3.4](#)). Students are not limited in the number of repeated courses and failures. Students who do not meet the minimum performance requirement will be required to withdraw from the Major program and will be placed in the General program provided their Degree Grade Point Average is 2.00 or above. Students will have the notation 'Required to Withdraw from the Major Program', recorded on their transcript of marks.

If below 2.00, students will be placed on academic warning, probation or academic suspension as outlined in [section 3.14 Academic Warning, Probation and Academic Suspension \(Academic Standing\)](#) in this *Chapter*.

**Failed courses:** A student is required to repeat those failed courses that are specified as required courses for the program. Students are subject to the University of Manitoba regulations (see [General Academic Regulations, Section 5.1.3 Repeating a Course](#) as described in this *Calendar*) and the [Riddell Faculty degree regulations regarding eligibility to repeat a course](#). Students who need to repeat a course more than once to fulfil degree requirements must contact a

[Riddell Faculty student advisor](#) for approval prior to registration.

### Program approval

The department head (or designate) and a [Riddell Faculty student advisor](#) in the Faculty general office must approve a student's Major program each term. Students must also obtain departmental approval for all revisions to their programs. For departmental approval, please contact [Brenda Miller](#). The [Advanced/Major/Honours Program Approval](#) forms are available on the Riddell Faculty web page. ([umanitoba.ca/environment/undergraduate](http://umanitoba.ca/environment/undergraduate))

### Graduation in the Major

In order to graduate from the Geology or Geophysics Major, students must complete all degree program and faculty requirements as stipulated in [section 3](#) and [/~/Catalog/ViewCatalog.aspx?pageid=viewcatalog&chapterid=1007&LoadUserEdits=true&section 8](#) of this *Chapter*. Students must also achieve the minimum performance requirements as outlined in the Graduation Requirements Table (see [section 8.3.5](#)). This is defined as a minimum Degree Grade Point Average of 2.30 on 120 or 121 credit hours which constitute the degree.

### Residence Requirement for Major Students

A student must successfully complete a minimum of 60 credit hours at the University of Manitoba. The courses used to satisfy the requirement must be acceptable for credit in the Clayton H. Riddell Faculty of Environment, Earth, and Resources. Residence requirements apply both to first and second-degree students.

### Recognition of Academic Merit

#### Degree with Distinction

To obtain a degree with distinction a student must achieve a minimum 3.50 Degree Grade Point Average on all courses constituting the Major degree. The term 'Degree with Distinction' will appear both on the parchment and on the student's transcript of marks.

#### 8.3.2 B.Sc. in Geological Sciences (Honours) Geology or Geophysics

The Honours programs are the most heavily concentrated programs offered and lead most directly to graduate studies. A student is required to achieve higher grade standards than in the Major degree program. The Honours degree may be pursued on a part-time basis, although it must be recognized that students will require additional terms to complete degree requirements. Students must complete the degree program within 8 years of gaining initial admission to the Honours program. Failure to complete the Honours degree within the 8-year time limit may require a student to transfer into the Major program.



A student will normally begin the Honours program in second year and must meet the entrance requirements set out below. Students in full-time study can expect to complete the prescribed courses in three years beyond the first year of University 1. Honours programs lead to either the B.Sc. Geological Sciences (Hons.) (Geology) or the B.Sc. Geological Sciences (Hons.) (Geophysics).

To be eligible for any award granted exclusively on the basis of academic performance, a student must normally be enrolled in a full-time program as defined by the department.

Students must complete the [University Written English and Mathematics requirement](#) as described in the chapter, [General Academic Regulations](#), of this *Calendar*.

### Entrance to Honours

To enter the Honours program in Geology or Geophysics, a student must have completed at least 24 credit hours with the minimum Degree Grade Point Average as stipulated in the Entrance and Continuation Requirements Table ([section 8.3.4](#)). In addition, the student must attain the minimum grade requirements specified for individual Year 1 courses according to the program tables for Honours Geology ([section 8.4](#)) or Honours Geophysics ([section 8.5](#)). Students who are ineligible to enter Honours with their admission to the Riddell Faculty may establish eligibility the following year on the basis of their second year of academic performance.

To enter the Honours degree program, a student must complete a program approval form available in the department general office and have it approved by the department head, or designate, and a [Riddell Faculty student advisor](#) in the Faculty general office.

### Continuation in Honours

A student's academic performance is assessed first with his/her application for admission to the Riddell Faculty and then following each *term* in which the student is registered. To be in **good standing** and permitted to continue in the degree program, a student must maintain the performance requirement as stipulated in the Entrance and Continuation Requirements Table ([section 8.3.4](#)). Students are not limited in the number of repeated courses and failures. Students who do not meet the minimum performance requirements will be placed on academic warning, probation or academic suspension as outlined in [section 3.14 Academic Warning, Probation and Academic Suspension \(Academic Standing\)](#) in this *Chapter*. Students who do not maintain this minimum average to remain in the program will be required to withdraw from the Honours program and, if eligible, will be placed in the Major program. Students will have the notation 'Required to Withdraw from the Honours Program' recorded on their transcript of marks.

### Program Approval

The department head (or designate) and a [Riddell Faculty student advisor](#) in the Faculty general office must approve a student's Major program each term. Students must also

obtain departmental approval for all revisions to their programs. For departmental approval, please contact [Brenda Miller](#). The [Advanced/Major/Honours Program Approval](#) forms are available on the Riddell Faculty web page. ([umanitoba.ca/environment/undergraduate](http://umanitoba.ca/environment/undergraduate))

### Residence Requirement for Honours Students

A student must successfully complete a minimum of 60 credit hours at the University of Manitoba. The courses used to satisfy the requirement must be acceptable for credit in the Clayton H. Riddell Faculty of Environment, Earth, and Resources. Residence requirements apply both to first and second-degree students.

### Graduation from Honours

In order to graduate from the Honours Geology and Geophysics programs, students must complete all degree program and faculty requirements as stipulated in [section 3](#) and [section 8](#) of this *Chapter*. Students must also achieve the minimum performance requirements as outlined in the Graduation Requirements Table (see [section 8.3.5](#)). This is defined for the Honours Geology program as a minimum Degree Grade Point Average of 3.00 on 120 credit hours which constitute the degree and for Honours Geophysics as a minimum Degree Grade Point Average of 2.80 on the 120 (121) credit hours which constitute the degree.

### Recognition of Academic Merit

#### First Class Honours

To graduate with **First Class Honours**, a student must achieve a Degree Grade Point Average of 3.50. The term 'First Class Honours' will appear both on the parchment and on the student's transcript of marks.

#### Honours Program Notes:

#### Double Honours Programs

Double Honours programs may be available. The program must be arranged in consultation with the departments concerned.

#### Honours Requirements and Options

Students who do not obtain the entrance requirements for the Honours program in their first year but who are interested in obtaining an Honours degree should consult with the department before registering for their second year.

#### Honours Geology Options

For students who wish to increase the focus of their knowledge, recommended electives are listed below:



*Environmental Geoscience*: BIOL 2300 (or AGECE 2370), CIVL 4250, SOIL 4060, SOIL 4130, SOIL 4500, GEOL 4370, GEOG 3390, ENVR 2180 (BIOL 2380 or AGRI 2180), ENVR 3110, ENVR 3250, or others approved by the department. (Students are responsible for completion of prerequisites for these courses.)

### Honours Geophysics Option

Students who wish to enter the Honours Geophysics Option and have not taken 6 credit hours of introductory Geological Sciences (eg., GEOL 1340 and one of GEOL 1400, GEOL 1410, or GEOL 1420) may arrange with the department to make up this credit. Students must contact the department during the spring preceding entrance to the Honours program. All course choices in the Honours program should be made after consultation with the coordinator of the Geophysics program

### 8.3.3 B.Sc. in Geological Sciences (General)

#### Degree Program Structure

- A Geological Sciences component consisting of a minimum of 30 credit hours.
- A Minor of 18 credit hours (minimum) in a different department or an interdisciplinary program. e.g. in the Clayton H. Riddell Faculty of Environment, Earth, and Resources, or the Faculty of Arts, or the Faculty of Science. The Minor requirements are described in

[section 3.2](#) of this *Chapter*. Contact the department and/or a Riddell Faculty [student advisor](#) in the Faculty general office for further information about eligible Minors.

Students will normally have completed University 1 requirements, which include 6 credit hours from the Faculty of Arts, 6 credit hours from the Faculty of Science. Students who have not met these requirements while in University 1, must meet the requirements prior to graduation.

#### Entrance to the General

To be admitted to the General program, a student must have completed at least 24 credit hours with a minimum Cumulative Grade Point Average of 2.00. In addition, a student must have completed GEOL 1340 with the grade of 'C'. Refer to [Section 8.6](#) for further program requirements.

#### Continuation in the General

A student's academic performance is assessed first with his/her application for admission to the Riddell Faculty and then following each term in which the student is registered. To be in good standing and permitted to continue in the degree program, a student must maintain a minimum

Degree Grade Point Average of 2.00 as stipulated in the Entrance and Continuation Requirements Table ([section 8.3.4](#)). Students are not limited in the number of repeated courses and failures. Students who do not meet the minimum performance requirement will be placed on academic warning, probation or academic suspension as outlined in [section 3.14 Academic Warning, Probation and Academic Suspension \(Academic Standing\)](#) in this *Chapter*.

**Failed courses:** A student is required to repeat those failed courses that are specified as required courses for the program. Students are subject to the University of Manitoba regulations (see [General Academic Regulations, Repeating a Course](#) as described in this *Calendar*) and the [Riddell Faculty degree regulations regarding eligibility to repeat a course](#). Students who need to repeat a course more than once to fulfil degree requirements must contact a [Riddell Faculty student advisor](#) for approval prior to registration.

#### Graduation in the General

To qualify for the degree, students must complete 90 credit hours, inclusive of Geological Sciences courses, a minor in a second department or program, and any University 1 requirements. Minimum performance requirements include

passing grades ("D" or better) in each course, a minimum degree grade point average of 2.00 in Geological Sciences courses, and an overall degree grade point average of 2.00 on the 90 credit hours which constitute the degree. Note: Where a Geological Sciences course listed in the calendar has required prerequisites, a student must hold a minimum grade of "C" in each prerequisite course.

#### Residence Requirement for General Students

Students must complete a total of 48 credit hours at the University of Manitoba, or they must complete their final 30 credit hours at the University of Manitoba in order to satisfy the residency requirement. The courses used to satisfy the requirement must be acceptable for credit in the Clayton H. Riddell Faculty of Environment, Earth, and Resources.

#### Recognition of Academic Merit

##### Degree with Distinction

To obtain a degree with distinction, a student must achieve a minimum 3.50 Degree Grade Point Average on all courses constituting the General degree. The term 'Degree with Distinction' will appear both on the parchment and on the student's transcript of marks.

### 8.3.4 Geological Sciences Entrance and Continuation Requirements

Minimum Degree Grade Point Average		
Degree Program	<a href="#">Entrance</a>	<a href="#">Continuation</a>



Major (Geology)	2.50 <sup>1</sup>	2.30 <sup>1</sup>
Major (Geophysics)	2.50 <sup>1</sup>	2.30 <sup>1</sup>
Honours (Geology)	3.00 <sup>1</sup>	3.00 <sup>1</sup>
Honours (Geophysics)	2.80 <sup>1</sup>	2.80 <sup>1</sup>
General (Geological Sciences)	2.00 <sup>1</sup>	2.00 <sup>1</sup>

**Notes:**

<sup>1</sup>In addition to the minimum degree grade point average noted in this chart, specific courses (with minimum grades) are required for entry and these are noted in the program chart for each program.

**8.3.5 Geological Sciences Graduation Requirements**

Degree Program	Minimum Degree Grade Point Average
Major (Geology) (120)	2.30
Major (Geophysics) (120)	2.30
Honours (Geology) (120)	3.00
Honours (Geophysics) (120)	2.80
General (Geological Sciences) (90)	2.00

**8.4 B.Sc. Geological Sciences (Geology) Program Chart**

8.4 B.Sc. Geological Sciences (Geology) <sup>1,7</sup>			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS GEOLOGY 120 CREDIT HOURS</b>			
GEOL 1340 <sup>7</sup> (B) and one of GEOL 1400, GEOL 1410, or GEOL 1420  6 credit hours from the Faculty of Arts	GEOL 2440, GEOL 2500, GEOL 2520, GEOL 2530, GEOL 2800, GEOL 2770, GEOL 3910 <sup>5</sup>	GEOL 2060, GEOL 3110, GEOL 3130, GEOL 3310, GEOL 3440, GEOL 3490, GEOL 3900, GEOL 4910 <sup>5</sup>  6 credit hours of Geological Sciences Electives from <a href="#">Lists A and B</a> <sup>4</sup>	GEOL 4670, GEOL 4870  12 credit hours of Geological Sciences Electives from <a href="#">Lists A and B</a> <sup>4</sup> not yet taken.
CHEM 1300, PHYS 1020 <sup>2</sup> , and MATH 1500 <sup>3</sup> must be completed in University 1 or Year 2. It is recommended that students complete the <a href="#">W course</a> in University 1 or Year 2.			
<b>MAJOR GEOLOGY 120 CREDIT HOURS</b>			
GEOL 1340 <sup>7</sup> (C+) and one of GEOL 1400, GEOL 1410, or GEOL 1420  6 credit hours from the Faculty of Arts	GEOL 2440, GEOL 2500, GEOL 2520, GEOL 2530, GEOL 2800, GEOL 2770, GEOL 3910 <sup>5</sup>	GEOL 2060, GEOL 3110, GEOL 3130, GEOL 3310, GEOL 3440, GEOL 3490, GEOL 3900, GEOL 4910 <sup>5</sup>	GEOL 4670, GEOL 4920  15 credit hours of Geological Sciences Electives from <a href="#">Lists A and B</a> <sup>4</sup> not yet taken
CHEM 1300, PHYS 1020 <sup>2</sup> , and MATH 1500 <sup>3</sup> must be completed in University 1 or Year 2. It is recommended that students complete the <a href="#">W course</a> in University 1 or Year 2.			
<b>Notes:</b>			
<sup>1</sup> The courses required in this program will satisfy the <a href="#">University Mathematics requirement</a> .			
<sup>2</sup> PHYS 1050 may be used in lieu of PHYS 1020.			
<sup>3</sup> MATH 1510 or MATH 1520 may be used in lieu of MATH 1500.			



<sup>4</sup>Among the Geological Sciences Electives, all students must complete at least 9 credit hours from List A. In addition, Honours students must complete 9 credit hours from List B or courses from List A not yet completed; Major students must complete at least 6 credit hours from List B or courses from List A not yet completed. NOTE: With departmental approval, students may substitute 6 credit hours of 2000-level or higher courses from other departments in order to satisfy professional registration requirements. See Other Note 1 below.

<sup>5</sup>Students will register for GEOL 3910 and GEOL 4910 in Summer term. NOTE: Students should be aware that they are expected to contribute to transportation and accommodation costs. See the department office at the beginning of each year for information.

<sup>6</sup>**IMPORTANT:** The Honours and Major programs need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program. (Letters in brackets indicate the minimum prerequisite standing in a specific course required for entry to the program).

<sup>7</sup>Students who have GEOL 1440 (007.144) or the former 007.124 should consult with the department. At the discretion of the department, GEOL 1440 (007.144) or 007.124 may be permitted in lieu of GEOL 1340 for entry.

One of GEOL 1400, GEOL 1410, or GEOL 1420 is highly recommended to be taken in Year 1, but will not be considered when assessing entrance requirements to the program. If this requirement is not fulfilled in Year 1, it must be completed by the end of Year 2.

**NOTE:**

- To fulfil prerequisite requirements, a grade of 'C' must be achieved in any course stipulated as prerequisite to a further course in Geological Sciences.
- All courses are not offered every year. The course schedule for the current academic term is available from the [Class Schedule](#).
- Students registering in certain courses may be required to pay a portion of the costs associated with field trips. For details, contact the [department general office](#).
- Equivalent courses offered through Université de Saint Boniface may be used in lieu of the specified courses identified in the degree program chart. Université de Saint-Boniface courses end in the number '1' (e.g. CHEM 1301).

**Other Note 1: Geological Sciences - Geology Electives Lists A and B**

**List A Electives:** Honours and Major students must complete a minimum of 9 credit hours from the following courses:

GEOL 2390	Environmental Geology (3)
GEOL 4280	Instrumental Techniques In Geology (3)L
GEOL 4300	Mineral Deposits (3)L
GEOL 4520	Petroleum Geology (3)L
GEOL 4890	Basin Analysis (3)L

**List B Electives:** Honours students are required to complete a minimum of 9 credit hours; Major students must complete a minimum of 6 credit hours from the following courses:

GEOL 3140	Gemology (3)L
GEOL 3420	Engineering Geology (3)
GEOL 3450	Hydrogeology (3) L
GEOL 3740	Exploration Seismology (3)L
GEOL 3750	Geology and Geophysics of the Planets (3)L
GEOL 3810	Applied Geophysics (3)L
GEOL 4260	Applied Geophysics Field Course (3)
GEOL 4270	Advanced Studies in Earth Sciences (3)
GEOL 4310	Paleontologic Principles (3)L
GEOL 4360	Mineral Exploration Techniques (3) L
GEOL 4370	Global Change (3)
GEOL 4740	Geophysics Field School (6)
GEOG 2250	Introduction to Geographic Information Systems (3)L



and/or up to 6 credit hours of additional courses not yet completed from List A.

**NOTE:** With departmental approval, up to 6 credit hours of 2000-level or higher courses from other departments may be substituted for courses in List B in order to satisfy professional registration (APEGM) requirements.

**8.5 B.Sc. Geological Sciences (Geophysics) Program Chart**

8.5 B.Sc. Geological Sciences (Geophysics) <sup>5,7</sup>			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS GEOPHYSICS 121 CREDIT HOURS</b>			
GEOL 1340 <sup>6</sup> (B) and one of: GEOL 1400, GEOL 1410, or GEOL 1420  PHYS 1050(B) [or PHYS 1020(B+)], PHYS 1070(B), MATH 1210 <sup>1</sup> , MATH 1510 <sup>1</sup> (B), and MATH 1710 <sup>1</sup> (B) [or MATH 1500(B) and MATH 1700(B)1]  Plus 6 credit hours from the Faculty of Arts, which should include the required 'W' course	GEOL 2060, GEOL 2440, GEOL 2520, GEOL 2530, GEOL 2540  PHYS 2390, PHYS 2490, MATH 2130 <sup>2</sup> , MATH 2132 <sup>2</sup> , COMP 1010	GEOL 3130, GEOL 3740, GEOL 3810, GEOL 4670, GEOL 4740 <sup>4</sup> , GEOL 4810, GEOL 4870, CHEM 1300, PHYS 2600, MATH 2120 <sup>3</sup> ,  9 credit hours of Geological Sciences Geophysics Electives from List A, 6 credit hours of Geological Sciences Geophysics Electives from List P and 6 credit hours of Geological Sciences Geophysics Electives from List B.	
30 Credit Hours	30 Credit Hours	60 Credit Hours for Year 3 and 4 <sup>7</sup>	
<b>MAJOR GEOPHYSICS 121 CREDIT HOURS</b>			
GEOL 1340 <sup>6</sup> (C+) and one of: GEOL 1400, GEOL 1410, or GEOL 1420  PHYS 1050(C+) [or PHYS 1020(B)], PHYS 1070(C), MATH 1210 <sup>1</sup> , MATH 1510 <sup>1</sup> (C+), and MATH 1710 <sup>1</sup> (C) [or MATH 1500(C+) and MATH 1700(C)1]	GEOL 2060, GEOL 2440, GEOL 2520, GEOL 2530, GEOL 2540  PHYS 2390, PHYS 2490, MATH 2130 <sup>2</sup> , MATH 2132 <sup>2</sup> , COMP 1010	GEOL 3130, GEOL 3740, GEOL 3810, GEOL 4670, GEOL 4810, GEOL 4920, CHEM 1300, PHYS 2600, MATH 2120 <sup>3</sup> , GEOL 4740 <sup>4</sup>  6 credit hours of Geological Sciences Geophysics Electives from List A, 3 credit hours of Geological Sciences Geophysics Electives from List P and 6 credit hours of Geological Sciences Geophysics Electives from List B.	
6 credit hours from the Faculty of Arts, which should include the required 'W' course			
<b>NOTES:</b> <sup>1</sup> MATH 1690 may be taken in place of MATH 1500 (or MATH 1510) and MATH 1700 (or MATH 1710); MATH 1300 may be taken in place of MATH 1210. Selection of MATH 1300 or MATH 1210 will determine the prerequisite background for Mathematics courses required in years 2, 3 and 4. <sup>2</sup> MATH 2720 and MATH 2730 may be taken in place of MATH 2130 and MATH 2132. Students should note that MATH 1300 is a prerequisite to MATH 2720 and a corequisite to MATH 2730. <sup>3</sup> MATH 2600 may be taken in place of MATH 2120 <sup>4</sup> GEOL 4740 will normally be taken immediately following the spring examinations on or about May 1 and will continue for approximately three weeks. Registration will show as Summer Term. NOTE: Students are expected to contribute to the costs of transportation, lodging, and food. Contact the Department for further information. <sup>5</sup> The courses required in this program satisfy the university mathematics requirement. <sup>6</sup> Students who have GEOL 1440 (007.144) or the former 007.124 should consult with the department. At the discretion of the department, GEOL 1440 (007.144) or 007.124 may be permitted in lieu of GEOL 1340 for entry. One of GEOL 1400, GEOL 1410, or GEOL 1420 is highly recommended to be taken in Year 1, but will not be considered when assessing entrance requirements to the program. If this requirement is not fulfilled in Year 1, it must be completed by the end of Year 2. <sup>7</sup> <b>IMPORTANT:</b> The Honours and Major programs need not be completed in the manner prescribed in the chart above. The chart			



indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program. (Letters in brackets indicate the minimum prerequisite standing required for further study)

**NOTE:**

- To fulfil prerequisite requirements, a grade of 'C' must be achieved in any course stipulated as prerequisite to a further course in Geological Sciences.
- All courses are not offered every year. The course schedule for the current academic term is available from the [Class Schedule](#)
- Students registering in certain courses may be required to pay a portion of the costs associated with field trips. For details, contact the [department general office](#).
- Equivalent courses offered through Université de Saint- Boniface may be used in lieu of the specified courses identified in the degree program chart. Université de Saint-Boniface courses end in the number '1' (e.g. PHYS 1051).

**Other Note 1: Geological Sciences - Geophysics Electives Lists A, B and P**

**List A Electives:** Honours students are required to complete a minimum of 9 credit hours; Major students must complete a minimum of 6 credit hours from the following courses:

GEOL 4250	Theory and Application of Geophysical Inversion Methods (3)L
GEOL 4320	Physics of the Earth: Seismology and Heat Flow (3)
GEOL 4330	Physics of the Earth: Geomagnetism and Gravity (3)

**List B Electives:** Honours students are required to complete a minimum of 6 credit hours; Major students must complete a minimum of 6 credit hours from the following courses:

GEOL 2390	Environmental Geology (3)
GEOL 2770	Principles of Inorganic Geochemistry (3)L
GEOL 3110	Petrogenesis of Igneous Rocks (3)L
GEOL 3420	Engineering Geology (3)
GEOL 3440	Structure and Metamorphism (3)L
GEOL 3450	Hydrogeology (3)L
GEOL 3490	Glacial Geology and Geomorphology (3)L
GEOL 3750	Geology and Geophysics of the Planets (3)L
GEOL 3900	Sedimentology (3)L
GEOL 3910	Introduction to Field Mapping (3)
GEOL 4270	Advanced Studies in Earth Sciences (3)
GEOL 4300	Mineral Deposits (3)L
GEOL 4360	Mineral Exploration Techniques (3)L
GEOL 4370	Global Change (3)
GEOL 4520	Petroleum Geology (3)L
GEOL 4890	Basin Analysis (3)L
GEOL 4910	Advanced Field Mapping (3)
GEOG 2250	Introduction to Geographic Information Systems (3)L

Any List A or P not already taken, or any advanced level Geological Sciences, Physics or Mathematics course(s) approved by department.

**List P Electives:** Honours students are required to complete a minimum of 6 credit hours; Major students must complete a minimum of 3 credit hours from the following courses:

CHEM 2290	Chemical Energetics and Dynamics: Macroscopic De-scriptions (3)L
MECH 2260	Introduction to Fluid Mechanics (3)L
PHYS 2610	Circuit Theory and Introductory Electronics (3)L
PHYS 2650	Classical Mechanics 1 (3)
PHYS 3630	Electro - and Magnetostatic Theory (3)
PHYS 3670	Classical Thermodynamics (3)

Or alternate physical science course(s) approved by department.

**8.6 B.Sc. Geological Sciences (General) Program Chart**

8.6 B.Sc. Geological Sciences (General)		
UNIVERSITY 1	YEAR 2	YEAR 3
<b>GENERAL 90 CREDIT HOURS</b>		
GEOL 1340 <sup>1</sup> (C) plus one of GEOL 1400, GEOL 1410, or GEOL 1420	GEOL 2540 <sup>2</sup> plus a further 21 credit hours in Geological Sciences courses numbered at the 2000-level or above	
A minimum grade of 'C' on 6 credit		



hours from a second department or program for a minor <sup>3</sup>	A further 12 credit hours for the minor <sup>4</sup>
Meet any University 1 requirements <sup>5</sup>	
It is recommended that students complete the M and W course in University 1 or Year 2.	
<b>MINOR GEOLOGICAL SCIENCES 18 CREDIT HOURS</b>	
GEOL 1340 and one of GEOL 1400, GEOL 1410, or GEOL 1420	Plus 12 credit hours chosen from 2000- and 3000-level courses
<p><b>Notes:</b></p> <p><sup>1</sup>Students who have GEOL 1440 (007.144) or the former 007.124 should consult with the department. At the discretion of the department, GEOL 1440 (007.144) or 007.124 may be permitted in lieu of GEOL 1340 for entry. One of GEOL 1400, GEOL 1410, or GEOL 1420 is highly recommended to be taken in Year 1, but will not be considered when assessing entrance requirements to the program. If this requirement is not fulfilled in Year 1, it must be completed by the end of Year 2.</p> <p><sup>2</sup> GEOL 2500 may be used in lieu of GEOL 2540. Manitoba 40S Chemistry, CHEM 0090 or equivalent is a prerequisite for GEOL 2540 and GEOL 2500. CHEM 1300 is highly recommended and should be taken in U1.</p> <p><sup>3</sup> Students should determine their minor prior to the end of the Year 2 of the program.</p> <p><sup>4</sup>A minor will normally correspond to a Minor as outlined in a program chart for a specific department or program, e.g. refer to program charts for departments in the Clayton H. Riddell Faculty of Environment, Earth, and Resources, or in the Faculty of Arts, or in the Faculty of Science</p> <p><sup>5</sup> Any U1 requirements not met in Year 1 must be completed before graduation.</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>To fulfil prerequisite requirements, a grade of 'C' must be achieved in any course stipulated as prerequisite to a further course in Geological Sciences.</li> <li>All courses are not offered every year. The course schedule for the current academic term is available from the <a href="#">Class Schedule</a></li> <li>Students registering in certain courses may be required to pay a portion of the costs associated with field trips. For details, contact the <a href="#">department general office</a>.</li> </ul> <p>Equivalent courses offered through Université de Saint- Boniface may be used in lieu of the specified courses identified in the degree program chart. Université de Saint-Boniface courses end in the number '1' (e.g. GEOG 1281).</p>	

## 8.7 Environment, Earth, and Resources -

### 1000 Level

#### EER 1000 Earth: A User's Guide Cr.Hrs.3

This course will present a multi-disciplinary introduction to the Planet Earth as both the source of essential resources and as the site of resulting negative impacts. Focus in the course will be provided by addressing important and current topics, case studies, and concepts that the well-educated citizen of the Earth should understand and will include

natural and human-induced processes within a broad range of spatial and temporal scales.

Take a trip across billions of years, as we explore awesome times in the evolution of our planet and its life -- from dust to us! Not to be held with (GEOL 1350 or 007.135 or 007.123).

**GEOL 1410** Natural Disasters and Global Change Cr.Hrs.3  
Discover how and when natural disasters occur, and how to identify and recognize them. Explore the Earth processes that lead to natural disasters and global change. Not to be held with (GEOL 1360 or 007.136).

**GEOL 1420** Exploring the Planets Cr.Hrs.3  
Discover the Solar System as we explore ancient ideas and modern concepts. Emphasis will be on recent space exploration and a comparison of the Earth and its neighbours. Not to be held with (GEOL 1370 or 007.137 or 007.124).

### 8.8 Geological Sciences -1000 Level

#### GEOL 1340 The Dynamic Earth Cr.Hrs.3

(Lab Required) (Formerly 007.134) An introduction to dynamics of the Earth's interior and surface that created the environment in which life evolved and that continue to change the world in which people now live. Taught with GEOL 2250. Not to be held with (GEOL 1440 or 007.144) or GEOL 2250 (007.225) or (007.123) or (007.124). Recommended for students intending to proceed in further courses in the Geological Sciences.

**GEOL 1400** Time-Trekker's Travelog: Our Evolving Earth Cr.Hrs.3

### 8.8 Geological Sciences -2000 Level

#### GEOL 2060 Introductory Geophysics Cr.Hrs.3

(Lab Required) (Formerly 007.206) An introduction to geophysical exploration, Earth physics, satellite geophysics and remote sensing. Emphasis will be on quantitative modeling and will include geophysical measurements and handling of data. Prerequisites: [GEOL 1340 or (007.134), or (GEOL 1440 or 007.144), or (007.123), or (007.124) (C)], and [MATH 1300 (136.130), or MATH 1310 (136.131), or MATH 1500 (136.150), or MATH 1510 (136.151), or MATH 1520 (136.152), or MATH 1530 (136.153) (C)], and [PHYS 1020 (016.102), or PHYS 1050 (016.105) (C)], or permission



of department head.

**GEOL 2250** Geology for Engineers Cr.Hrs.4  
(Lab Required) (Formerly 007.225) Principles of physical geology; materials in processes in geology; classification of igneous, metamorphic, and sedimentary rocks; elementary geological and geophysical surveying techniques; geological hazards, volcanism, earthquakes, landsliding, processes of weathering, transportation and geomorphology. For Engineering students only. Not to be held with GEOL 1340 (007.134), or (GEOL 1440 or 007.144), or (007.123), or (007.124).

**GEOL 2390** Environmental Geology Cr.Hrs.3  
(Formerly 007.239) Examination of geological processes and material as they interact with human activities, environmental planning, and management. Also available by correspondence. Prerequisite: university geology or GEOG 1290 or GEOG 1291 (053.129) (C), or (GEOG 1200) or GEOG 1201 (053.120) (C), or permission of department head.

**GEOL 2440** Structural Geology 1 Cr.Hrs.3  
(Lab Required) (Formerly 007.244) Elementary mechanical principles of rock deformation, brittle and continuous deformation, geometry of faults, folds, joints, cleavage, lineations. Descriptive geometric and stereonet solution to structural geology problems, cross sections, structural contour maps. Prerequisite: GEOL 1340 (007.134) (C), or (GEOL 1440 or 007.144) (C), or (007.123) (C), or (007.124) (C).

**GEOL 2500** Introduction to Mineralogy Cr.Hrs.3  
(Lab Required) (Formerly 007.250) An introduction to the chemistry, physics and classification of minerals. Brief, systematic description of about 200 of the most important minerals. Laboratory: hand specimen identification. For Major and Honours Geology students only. Entry to other students would be after consultation with the department and by permission. Not to be held with GEOL 2540 or (007.207) or (007.262). Prerequisites: (40S Chemistry or CHEM 0900 (002.090) (Pass)), and (GEOL 1340 (007.134) (C), or (GEOL 1440 or 007.144) (C), or (007.123) (C), or (007.124) (C), or (007.132) (C), or (007.133) (C)), or permission of department head. CHEM 1300 (002.130) is highly recommended. This course is intended for Major or Honours Geology students.

**GEOL 2520** Igneous and Metamorphic Petrology Cr.Hrs.3  
(Lab Required) (Formerly 007.252) The classification, occurrence and origin of igneous and metamorphic rocks. The study and identification of rocks using hand specimens and thin sections. Prerequisites: (GEOL 2500 (007.250) (C) and GEOL 2800 (C), or (007.260) (C)), or GEOL 2540 (C).

**GEOL 2530** Introductory Sedimentary Petrology and Stratigraphy Cr.Hrs.3  
(Lab Required) (Formerly 007.253) An introduction to sedimentary deposits and principles of stratigraphic analysis. Occurrence, classification and origin of sedimentary deposits. Facies concept, stratigraphic classification and correlation. Prerequisites: (GEOL 2500 (007.250) (C) and GEOL 2800 (C), or (007.260) (C)), or GEOL 2540 (C).

**GEOL 2540** Introductory Mineralogy with Essential of Mineral Optics Cr.Hrs.3  
(Lab Required) An introduction to the chemical composition,

crystal structure, physical and optical properties of the most common minerals. Discussion of the occurrence of minerals in nature. Laboratory: Identification of minerals in hand specimens and thin sections. Not intended for students in Major or Honours Geology programs. Not to be held with GEOL 2500 (007.250). Prerequisites: (40S Chemistry or CHEM 0900 (002.090) (Pass) or equivalent), and (GEOL 1340 (007.134) (C), or (GEOL 1440 or 007.144) (C), or (007.123) (C), or (007.124) (C)), or permission of department head. CHEM 1300 (002.130) is highly recommended.

**GEOL 2570** Energy and Mineral Resources Cr.Hrs.3  
(Formerly 007.257) An introduction to the geological factors and processes responsible for the origin, concentration and distribution of fuels, geothermal resources, metallic and nonmetallic minerals. Available by correspondence only. Not for credit in a Major or Honours program in Geological Sciences. Prerequisite: Any university-level Geology course, or permission of department head.

**GEOL 2770** Principles of Inorganic Geochemistry Cr.Hrs.3  
(Lab Required) (Formerly 007.277) The cosmic abundance of the elements, nucleosynthesis, geological differentiation of the elements; chemical petrology of igneous, metamorphic and sedimentary rocks. An introduction to aqueous and low-temperature geochemistry. Prerequisite: GEOL 2500 (007.250) (C), or GEOL 2540 (C). Prerequisite or Concurrent Requirement: CHEM 1300 (002.130).

**GEOL 2800** Optics and Spectroscopy of Minerals Cr.Hrs.3  
(Lab Required) Use of the petrographic microscope; microscopic recognition of common rock-forming minerals; introduction to spectroscopic techniques in geosciences (including optical, vibrational and luminescence techniques). Not to be held with (007.260). Prerequisite or Corequisite: GEOL 2500 (007.250) (C), or permission of department head.

## 8.8 Geological Sciences -3000 Level

**GEOL 3110** Petrogenesis of Igneous Rocks Cr.Hrs.3  
(Lab Required) (Formerly 007.311) Crystallization processes in magma and resultant textures; physical, chemical, and kinetic processes of magmatic systems. Prerequisites: (GEOL 2520 (007.252) (C)), and (GEOL 2770 (007.277) (C)).

**GEOL 3130** Communication Methods in the Geological Sciences Cr.Hrs.3  
(Lab Required) (Formerly 007.313) Practice in oral and written description of geologic subjects; tools of library and database research; manuscript organization; abstract writing; computer-aided table, figure, and slide preparation. Prerequisites: (GEOL 2500 (007.250) (C)), and (GEOL 2440 (007.244) (C)). This course is for students in the Honours and Major Geological Sciences programs only.

**GEOL 3140** Gemology Cr.Hrs.3  
(Lab Required) (Formerly 007.314) An introduction to the scientific study of natural and synthetic gem materials, methods of their identification and principles of gemstone appraisals. Laboratory: identification of gemstones using optical methods. Prerequisites: (GEOL 2500 (007.250) (C)), and (GEOL 2800 (C), or (007.260) (C), or GEOL 2540 (C)).

**GEOL 3310 Paleontology Cr.Hrs.3**

(Lab Required) (Formerly 007.331) The study of fossils: invertebrate paleontology, with an introduction to paleontologic principles, vertebrate paleontology, and paleobotany. Prerequisite: GEOL 1340 (007.134) (C), or (GEOL 1440 or 007.144) (C), or (007.123) (C), or (007.124) (C), or permission of department head.

**GEOL 3420 Engineering Geology Cr.Hrs.3**

(Formerly 007.342) Engineering properties of rocks, laboratory testing and site investigations in engineering geology. Rocks as construction materials, engineering geology of tunnels, bridges, dams, reservoirs, shorelines, sanitary landfills, landslides, seismic risk areas, etc. Prerequisites: (GEOL 2440 (007.244) (C)), and (GEOL 2520 (007.252) (C)), and (GEOL 2530 (007.253) (C)).

**GEOL 3440 Structure and Metamorphism Cr.Hrs.3**

(Lab Required) Structural and metamorphic geology, links between deformation and metamorphism, and the application of pressure-temperature and time paths to study metamorphic equilibria. Not to be held with (GEOL 3290 or 007.329). Prerequisites: GEOL 2440, and GEOL 2520, and GEOL 3910, or permission of department head.

**GEOL 3450 Hydrogeology Cr.Hrs.3**

(Lab required) The hydrologic cycle and basic hydrologic processes; properties of aquifers and principles of groundwater flow; well hydraulics and groundwater resource evaluation; regional groundwater flow and subsurface geology; and basic chemical hydrogeology. Not to be held with CIVL 4250. Prerequisites: (MATH 1500 or MATH 1510 (C)), and (PHYS 1020 or PHYS 1050 (C)), and CHEM 1300 (C), and (GEOL 2060 or GEOG 2310 (C)), and GEOL 2530 (C).

**GEOL 3490 Glacial Geology and Geomorphology Cr.Hrs.3**

(Lab Required) (Formerly 007.349) Principles of landform development with emphasis on glacial deposition. Aerial photo and map interpretation in lab. Not to be held with GEOG 3580 (053.358). Prerequisite: GEOL 2530 (007.253) (C).

**GEOL 3740 Exploration Seismology Cr.Hrs.3**

(Lab Required) (Formerly 007.374) Collection of seismic data (land and sea); simple elastic wave theory; geometry of refraction and reflection seismology; rock velocity determination; seismic noise and signal; data corrections; data enhancement techniques; representation of data; survey procedures. Prerequisites: (GEOL 2060 (007.206) (C)), and (MATH 1500 (136.150) (C), or MATH 1510 (136.151) (C), or MATH 1520 (136.152) (C), or MATH 1530 (136.153) (C), or MATH 1690 (136.169) (C)).

**GEOL 3750 Geology and Geophysics of the Planets Cr.Hrs.3**

(Lab Required) (Formerly 007.375) Physical and chemical nature of the inner and outer planets and their satellites, asteroids and meteorites. The application of geophysical, geochemical and petrological techniques to planetology; remote sensing study of geological features of planetary surfaces and atmospheres. Prerequisite: GEOL 2060 (007.206) (C), or permission of department head.

**GEOL 3810 Applied Geophysics Cr.Hrs.3**

(Lab Required) (Formerly 007.381) The application of geophysical methods including gravity, magnetics, seismic

reflection and refraction, electrical and electromagnetics methods in exploration, and environmental and engineering problems. Prerequisite: GEOL 2060 (007.206) (C).

**GEOL 3900 Sedimentology Cr.Hrs.3**

(Lab Required) (Formerly 007.390) The study of depositional environments of sedimentary rocks. Facies analysis and modeling of sedimentary deposits. Prerequisite: GEOL 2530 (007.253) (C).

**GEOL 3910 Introduction to Field Mapping Cr.Hrs.3**

(Formerly 007.391) Twelve day course introducing field mapping techniques including field navigation and basic field interpretations. Students are responsible for costs of room and board during the field course. Offered in the Summer term. Not to be held with (007.449). Prerequisites: (GEOL 2440 or 007.244)(C)), and (GEOL 2520 (007.252)(C)), and (GEOL 2530 (007.253)(C)), and permission of department head.

**8.8 Geological Sciences -4000 Level****GEOL 4250 Theory and Application of Geophysical Inversion Methods Cr.Hrs.3**

(Lab Required) (Formerly 007.425) Introduction to generalized and linear/non-linear inversion theory. Inversion techniques for the potential field, electrical and seismic data will be discussed. Application to global problems will also be discussed. Prerequisites:(GEOL 2060 (007.206) (C)), and(MATH 2100 (136.210) (C), or MATH 1300 (136.130) (C), or MATH 1310 (136.131) (C)).

**GEOL 4260 Applied Geophysics Field Course Cr.Hrs.3**

(Formerly 007.426) One and one-half weeks field instruction in the planning and execution of geophysical surveys and the use of portable geophysical instruments. Taught with the first half of GEOL 4740 (007.474). Not to be held with GEOL 4740 (007.474). Prerequisites: GEOL 3810 (007.381 or 007.380) (C), and permission of department head.

**GEOL 4270 Advanced Studies in Earth Sciences Cr.Hrs.3**

(Formerly 007.427) Advanced study in a selected subject in Earth sciences. Prerequisite: Permission of department head.

**GEOL 4280 Instrumental Techniques in Geology Cr.Hrs.3**

(Lab Required) (Formerly 007.428) Lecture and laboratory course covering the application of microbeam, mass spectrometer, diffraction and wet geochemical analytical techniques in mineralogy and geochemistry. Includes coverage of ICP, PIXE, powder and single crystal diffraction and electron microprobe analysis. Prerequisites: (GEOL 2520 (007.252) (C)), and (GEOL 2530 (007.253) (C)), and (GEOL 2770 (007.277) (C)).

**GEOL 4300 Mineral Deposits Cr.Hrs.3**

(Lab Required) (Formerly 007.430) The tectonic setting and deformational and structural nature of ore deposits. The physics and chemistry of ore deposition and ore bearing fluids. The mineralogical, textural and environmental constraints on resource exploitation. Prerequisites: (GEOL 3110 (007.311) (C)), and (GEOL 3900 (007.390) (C)).

**GEOL 4310 Paleontologic Principles Cr.Hrs.3**

(Lab Required) (Formerly 007.431) Interpretation of Earth history using fossils: topics in taxonomy, functional



morphology, paleoecology, evolution, biostratigraphy, and biogeography. Prerequisite: GEOL 3310 (007.331) (C), or permission of department head.

**GEOL 4320** Physics of the Earth: Seismology and Heat Flow Cr.Hrs.3

(Formerly 007.432) Seismology and the structure, physical properties and equations of state of the Earth's interior; thermal constitution and the history of the Earth. Prerequisites: (GEOL 2060 (007.206) (C)), and (PHYS 2390 (C), and PHYS 2490 (C), or (016.237) (C)).

**GEOL 4330** Physics of the Earth: Geomagnetism and Gravity Cr.Hrs.3

(Formerly 007.433) Geomagnetism and geoelectricity; paleomagnetism; figure, rotation and gravity of the Earth. Prerequisites: (GEOL 2060 (007.206) (C)), and (PHYS 2390 (C), and PHYS 2490 (C), or (016.237) (C)).

**GEOL 4360** Mineral Exploration Techniques Cr.Hrs.3

(Lab Required) The course will examine methodologies used in exploration and evaluation of Canadian mineral deposits and case studies illustrating the application of these methods. Prerequisite: GEOL 3910 (C), or GEOL 3810 (C). Recommended pre- or co-requisite: GEOL 4300.

**GEOL 4370** Global Change Cr.Hrs.3

(Formerly 007.437) Examination of the major processes controlling global change through time. The causes, magnitude, and periodicity of changes in the geological record resulting from the variability and interaction of continents, oceans, atmospheres, climate, Earth-sun relationships, and ice sheets, with an emphasis on paleoclimate. Prerequisite: GEOL 3900 (007.390) (C). Prerequisite or Concurrent Requirement: GEOL 3490 (007.349).

**GEOL 4520** Petroleum Geology Cr.Hrs.3

(Lab Required) (Formerly 007.452) A study of the physical properties, origins and maturation, migration, and accumulation of petroleum products. Prerequisite: GEOL 3900 (007.390) (C).

**GEOL 4670** Global Tectonics Cr.Hrs.3

(Lab Required) (Formerly 007.467) The structure and properties of, and physical processes taking place within, the Earth's interior. Continental cratons and their margins, orogenic belts, structural and petrologic features of the ocean basins, modern diastrophism, global tectonic theories. Prerequisites: (GEOL 3440 or (GEOL 3290) (C)), or GEOL 4320 (C), or permission of department head.

**GEOL 4740** Geophysics Field Course Cr.Hrs.6

(Formerly 007.474) Three weeks of making geophysical surveys. Starts immediately following April examinations. Maps and reports to be submitted at the end of the three-week period. Students are responsible for costs of room and board during the field course. Offered in alternate Summer terms. Not to be held with GEOL 4260 (007.426). Prerequisites: GEOL 3810 (007.381 or 007.380) (C), and permission of department head.

**GEOL 4810** Geophysical Data Analysis Cr.Hrs.3

(Formerly 007.481) The theory and application of spectral methods in geophysics. The use of Fourier Transforms, convolution, power spectra, coherence, transfer functions, covariance, correlation and filtering. Prerequisite: PHYS

2490 or (016.237) (C), or permission of department head.

**GEOL 4870** Honours Thesis Cr.Hrs.6

(Formerly 007.487) A thesis based on a research project conducted by a fourth-year Honours student in Geology or Geophysics. Selection of a project and supervisor to be arranged prior to September 30 and submitted in writing to the department head. Consult with the department for submission deadlines. Not to be held with (007.495) or (007.496). Prerequisite: Permission of department head.

**GEOL 4890** Basin Analysis Cr.Hrs.3

(Lab Required) (Formerly 007.489) The study of major sedimentary basins. Qualitative and quantitative aspects of basin origin, classification, evolution, fluid content and diagenesis, and sedimentary facies architecture. Prerequisite: GEOL 4520 (007.452) (C).

**GEOL 4910** Advanced Field Mapping Cr.Hrs.3

(Formerly 007.491) Twelve-day course developing field mapping techniques including independent mapping and interpretation and synthesis in complex geological terrains. Students are responsible for costs of room and board during the field course. Offered in the Summer term. Not to be held with (007.449). Prerequisites: (GEOL 3440 or (GEOL 3290) (C)), and GEOL 3910 (C), and permission of department head.

**GEOL 4920** Technical Report Cr.Hrs.3

(Formerly 007.492) A technical report based on a geoscience research project conducted by a fourth year Major student in Geology or Geophysics. Not to be held with GEOL 4870 (007.487). Normally this course is available after completion of Year 3 requirements in Geology or Geophysics Major program. Prerequisite: Permission of department head.



## Extended Education

**Dean:** Lori Wallace

**Associate Dean(s):** Kathleen Matheos

**Campus Address/General Office:** 188 Extended Education Complex

**Fax:** (204) 474 7661

**Website:** [umanitoba.ca/extended](http://umanitoba.ca/extended)

**Telephone:** (204) 474 9921

1 800 432 1960 ext. 9921 (Toll free in Manitoba)

1 888 216 7011 ext. 9921 (Toll free in Canada)

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### SECTION 1: Extended Education

Extended Education provides a central focus for adult, distance, mature and summer continuing education in the university and undertakes planning and general administration for these programs and services. Insofar as possible, the university accepts the principle of parity of accessibility to its services in all areas of the province regardless of economic, geographic, physical, or social disadvantage.

Extended Education coordinates a wide range of programs through which degree courses and non-degree or certificate courses are offered. Degree courses are drawn from the offerings of various faculties and schools. Students must apply to, be admitted to, and register in a particular faculty or school to receive credit towards a degree.

### SECTION 2: Program Areas

#### 2.1 Access/Aboriginal Focus Programs,

**Area Director:** Diedre Desmarais

**General Office:** 188 Extended Education Complex

**Telephone:** 204-474-8000

#### Aboriginal Focus Programs

The Aboriginal Focus Programs area of Extended Education offers a range of programs that are designed to respond to the continuing education needs and concerns of Aboriginal people. The mission of the area is to create paths of choice in post-secondary education that are based on Indigenous worldviews and developed through partnerships with Indigenous Peoples and communities.

AFP offers certificate and diploma programs as well as degree programs through cooperative arrangements with Aboriginal stakeholders and faculties of The University of Manitoba. Programs are offered in a central location, as in-house training to staff of an organization, or as community-based programs. Programs are offered as 'open enrolment' or as block-funded cohort programs through an arrangement with an employer or sponsor. Delivery methodology can be part-time or full-time study, and can incorporate technology-based delivery where technology access permits. Aboriginal organizations that identify a need for specific post-secondary or adult education not currently available may be interested in knowing that AFP has the capacity to develop new programs to meet their needs. The following are programs currently being offered:

Degree/Diplomas	Years to Complete	Total Credit Hours
Aboriginal Environmental Stewardship Diploma	2	60
Aboriginal Community Wellness Diploma	2	60
Aboriginal Child and Family Services Diploma	2	60



Health Careers Transition Year (Degree credit)	1	21 to 24
General Transition Year (Degree credit)	1	21 to 24
Non-Degree – Certificates		
Aboriginal Counselling Skills Certificate	1	346 contact hours
Child Sexual Abuse Intervention & Treatment Certificate	1	380 contact hours
Special Education Educational Assistant Certificate	1	480 contact hours

### Aboriginal Child and Family Services Diploma

This off-campus program provides an opportunity for students to build their knowledge and skills base in the area of social services work. It would be of interest to individuals working, or anticipating future employment, in the Aboriginal Child Welfare field.

### Aboriginal Counselling Skills Certificate

This foundation program gives individuals in the helping professions, who are employed by First Nation and/or Aboriginal social service agencies, knowledge and skills in how to provide culturally appropriate counselling services to individuals and families. The Faculty of Social Work offers graduates 3 allocated and 6 unallocated hours of credit.

### Aboriginal Environmental Stewardship Diploma

This diploma is a partnership program between Aboriginal focus Programs and the University of Manitoba's Clayton H. Riddell Faculty of Environment, Earth and Resources, the Faculty of Arts; Department of Native Studies and Building Environmental Aboriginal Human Resources (BEAHR). This two-year diploma will address the assessment, monitoring, protection, management, sustainability, legal requirements and current issues in the environmental field. All courses include both Aboriginal and western world views on the environment. BEAHR will coordinate work experience for students enrolled in this diploma making it easier to obtain employment upon graduation.

### Child Sexual Abuse Intervention and Treatment Certificate

The disclosure of sexual abuse, as in the residential school experience, has highlighted the need for counsellors with specialised expertise. The CSAIT program builds on prior training and experience in counselling.

### Health Career Transition Year

This program enables students to gain the knowledge, skills and confidence needed to successfully pursue a professional health career. Students take a combination of preparatory and degree credit courses (21 – 24 credits) over one year. Tutorial, personal, financial and Aboriginal cultural supports are available to students.

### Aboriginal Community Wellness Diploma

This degree credit program provides a professional development opportunity in community wellness for Aboriginal health and wellness service workers and those wishing to enter the field. The program is offered through a partnership between The University of Manitoba and the Manitoba Community Wellness Working Group. Each course in the program incorporates an indigenous wellness perspective. The diploma is designed to meet the educational needs for generic and specialized fields of practice (e.g., addictions).

### Special Education Educational Assistant Certificate

This program provides culturally relevant accredited training for teacher assistants who work with special needs children under the direction of classroom and/or resource teachers.

### Transition Year (18 to 24 credit hours)

The off-campus Transition Year is designed to facilitate the successful transition of students from their community to full-time post-secondary study. Students take a combination of preparatory and degree credit courses (21 - 24 credits) over one year. Emphasis is on building students' academic and personal skills through specific support to students such as expanded instruction, tutorial support and orientations to the expectations of post-secondary education programs.

### Access Programs

**General Office: 220 Migizii Agamik, 45 Currie Place**  
**Telephone: 204 474 8000**  
[umanitoba.ca/extended/access](http://umanitoba.ca/extended/access)

### University of Manitoba Access Program (UMAP)

In cooperation with the Province of Manitoba, the University of Manitoba Access Program (UMAP) facilitates university studies at the degree level for persons who traditionally have not had the opportunity for such experience because of social, economic and cultural reasons, lack of formal education or residence in remote areas. Preference will be given to Aboriginal Manitobans (Status, Non-status, Metis, Inuit). Students in this program are provided with academic and personal supports. Financial assistance may be available. For information, call 474-8000 or, within Manitoba, 1-800-432-1960, extension 8000.

### Health Careers Access Program (HCAP)



This program is designed to prepare Manitoban Aboriginal persons (Status, Non-Status, Metis, Inuit) for entry to the health professional programs such as Medicine, Dentistry, Dental Hygiene, Pharmacy, Medical Rehabilitation (Occupational, Physical and Respiratory Therapy) and Nursing. Through the cooperation of the Province of Manitoba and the University of Manitoba, students in this program are provided with academic and personal supports. Financial assistance may be available. For information call 474-8000 or, within Manitoba, 1-800-432-1960, extension 8000.

### Professional Health Program (PHP)

This program is designed to support Aboriginal persons (Status, Non-Status, Metis, Inuit) in any of the professional health programs. Housed within the Centre for Aboriginal Health Education at the Bannatyne Campus this program provides academic and personal supports. Limited financial assistance may be available. For information call 474-8000 or, within Manitoba, 1-800-432-1960, extension 8000.

### Education Access Program (EAP)

The Education Access Program (EAP) is a partnership between the Faculty of Education and the Access Program. EAP provides students with supports to complete a Bachelor of Education (B.Ed.) degree at the University of Manitoba. Because the Bachelor of Education degree is an after-degree program, EAP students must complete their first degree with Access. For information call 474-8000 or, within Manitoba, 1-800-432-1960 extension 8000.

## 2.2 Continuing Education Programs

**Director:** Atlanta Sloane-Seale  
**General Office:** 188 Extended Education Complex  
**Telephone:** 204 474 8036

A variety of certificate programs, seminars, and short courses are offered for professional and personal development in general management, health and social services, adult education and training, accounting, municipal management and horticulture.

### Certificate Programs

Extended Education offers a range of professional continuing education certificate programs, in cooperation with agencies in the community and faculties and schools on campus. These programs vary in length, comprehensiveness, and level of certification. Most certificate programs are offered annually. See Section 4.0 below for a listing of certificate programs.

In addition to advising on existing programs, the staff of Extended Education will consult with individuals, groups, and organizations (profit and non-profit) who have an interest in or desire to develop learning experiences specific to their needs.

Copies of the current calendars of Continuing Education Programs are available by calling (204) 474 8016 or toll-free in Canada 1888 216 7011 (extension 8016) or visit our website: [umanitoba.ca/extended/coned](http://umanitoba.ca/extended/coned)

## 2.3 Distance and Online Education

**Director:** Jonathan Dyck  
**General Office:** 188D Extended Education Complex  
**Telephone:** 204-474-8012  
**Website:** [umanitoba.ca/distance](http://umanitoba.ca/distance)

Each year, over 8,000 students complete degree credit courses offered by Distance and Online Education. Our courses are open to all University of Manitoba (UM) students and provide an opportunity to complete courses without attending scheduled classes. If you require a flexible study schedule, would like to study year round, or simply appreciate the convenience of studying at home, Distance and Online Education provides you the opportunity to complete your degree. Many students choose to enroll in on-campus and Distance and Online Education courses at the same time.

Over 140 degree credit courses are offered from the following schools/faculties: Agricultural and Food Sciences; Art; Arts; Education; Engineering; Clayton H. Riddell Environment, Earth and Resources; Human Ecology; Kinesiology and Recreation Management; Science; and Social Work. Degree programs offered include a Bachelor of Arts, Bachelor of Arts in Geography, Bachelor of Social Work and Post-Baccalaureate Diploma in Education.

All Distance and Online Education courses are offered online. Course features include: online course materials; audio/video resources; chat, student lounge and e-mail; and online assignment submission. For further information regarding studying online, please see [umanitoba.ca/distance](http://umanitoba.ca/distance).

To request a copy of the 2012-13 Distance and Online Education course calendar, call 474-8012 (toll free in Canada at 1-888-216-7011, ext. 8012), visit [umanitoba.ca/distance](http://umanitoba.ca/distance), or stop by Distance and Online Education at 188D Extended Education Complex.

## 2.4 English Language Studies and International Programs

**Director:** Stephanie Olson  
**General Office:** 188 Extended Education Complex  
**Telephone:** 204 474 8738

English Language Studies provides opportunities for language learners to gain proficiency in additional languages. The area offers conversational language courses in French, Spanish, German, Japanese, Mandarin, Ukrainian, Korean and Arabic for beginner to advanced level students. Courses are part-time; sessions run from September to December, January to April and April to June.



The Area also offers part-time and full-time iB TOEFL and IELTS preparation courses several times a year and is an official iB TOEFL testing site.

Eight levels of Intensive English Program sessions ranging in lengths from four weeks to one year, and consisting of 25 hours of classroom instruction per week are offered throughout the year. Academic instruction, and socio-cultural activities constitute the basis of this program. Students are housed in residence on campus or with a homestay family. Similar programs are also offered for groups coming from Mexico, Japan and Korea. At our U of M Tokyo Campus, several Intensive English Program instructors spend the month of March teaching English to students from Sagami Women's University. At its downtown Winnipeg campus, English Language Studies offers Adult EAL classes for Newcomers.

In collaboration with the Faculty of Education, a Certificate in Teaching English as a Second Language (CTESL) is offered to meet the needs of individuals who are pursuing a teaching career in ESL. The Certificate program consists of five 40-hour courses, including four required courses and one approved elective course. Courses can be taken full-time or part-time.

## 2.5 General Studies

**Director:** Bill Kops

**General Office:** 188 Extended Education Complex

**Telephone:** 204-474-8330 or 474-7154

General Studies provides opportunities for students to take credit courses at the University of Manitoba without being enrolled in a degree program. Our students come from all walks of life: professionals developing their careers; students satisfying entrance requirements to professional and other faculties; seniors enriching their lives; students visiting from other institutions; individuals exploring a career change. Whatever your educational interests, General Studies is a great option for study at the University of Manitoba. Courses are available in the Fall and Winter terms, Summer Session, through Distance and Online Education and Off-Campus Study.

### Entrance Requirements to General Studies

Students may be admitted in one of the following categories: Auditing Student; Mature Student (Canadian Military only); Special Student; Visiting Student. Detailed information on the entrance requirements and a description of the student categories can be found in the [Admissions](#) section of this *Calendar* or by contacting the General Studies office.

### Student Services

A Student advisor is available to assist students with course and program planning, and to provide admission and registration information on a drop-in basis Monday through Friday - 9:00 am to 3:00 pm, 188 Extended Education.

For information call (204) 474 8330 or 474 7154, or toll-free in Canada, 1 888 216 7011 (extension 7154 or 8330) or visit our website at [umanitoba.ca/extended/general\\_studies](http://umanitoba.ca/extended/general_studies).

## 2.6 Inter-Universities North Program

In cooperation with Brandon University and the University of Winnipeg, courses in Arts, Science and Education are offered in communities north of the 53rd parallel. Telephone: 1 800 442 0462.

## 2.7 Military Support Office

**General Office:** 188 Extended Education Complex

**Telephone:** 204 474 8006

The Military Support Office is designed to assist CF personnel and their immediate family members in the pursuit of a university education. The office has experienced staff to assist in overcoming the problems which can result from the frequent moves and deployments experienced by members of the Defence family.

Through this unique office, the University of Manitoba takes into account the difficulty which extensive mobility can create in satisfying the residency requirement for graduation. Recognition is given for a wide range of military training, academic counselling services are provided by highly qualified student advisors, and provision is made for academic and financial relief when military duties interrupt studies.

Courses are available through Distance and Online Education or on campus, either part-time or full-time, and a Mature Student entry program is also offered.

Call toll-free within North America 1 800 850 6166, or e-mail [military@umanitoba.ca](mailto:military@umanitoba.ca). The MSO website is at [umanitoba.ca/extended/military](http://umanitoba.ca/extended/military).

## 2.8 Off-Campus Study

**Director:** Bill Kops

**General Office:** 188 Extended Education Complex

**Telephone:** 204 474 8019

Off-Campus Study is designed to improve accessibility and success in university for students. A flexible and convenient alternative, Off-Campus Study allows students to take degree courses at sites within Winnipeg other than the Fort Garry Campus. Courses are taught by University of Manitoba instructors in the evenings and on weekends. Courses in High School program allow Senior 4 students to take university courses while still in high school and receive university credit.

For information call (204) 474 8019, or toll-free in Canada 1 888 216 7011 (extension 8019) or e-mail [aclaman@ms.umanitoba.ca](mailto:aclaman@ms.umanitoba.ca), or visit our website at [umanitoba.ca/extended/off-campus](http://umanitoba.ca/extended/off-campus)



## 2.9 Summer Session,

**Director:** Bill Kops

**General Office:** 188 Extended Education Complex

**Telephone:** 204 474 6963

Summer Session offers a wide range of courses in the spring and summer, including feature programs, summer institutes, travel/study, off-campus and distance and online courses. Summer Session provides an opportunity to accelerate degree completion, ease course loads in the fall and winter, or catch up on missed courses.

**May and June Day** courses begin in early May and continue to late June. Most classes meet for two hours each day either in the morning or early afternoon.

**May to August Evening** courses run from early May to early August. Classes are generally scheduled two evenings each week and meet for two and one-half hours.

**July and August Day** courses begin in early July and continue to late August. Most classes meet for two hours each day either in the morning or early afternoon.

For information about Summer Session, call (204) 474-6963 or (204) 474-8008, or toll-free in Canada 1 888 216 7011 (extension 6963) or e-mail [summer@umanitoba.ca](mailto:summer@umanitoba.ca), or go to [umanitoba.ca/summer](http://umanitoba.ca/summer).

## SECTION 3: Certificate/Diploma Programs

### 3.1 Agriculture, Prairie Horticulture

The purpose of this program is to focus on horticulture specific to the prairies, especially with respect to production and market conditions, climate, crop type, pests, disease, and other relevant prairie topics. Offered by independent study, part-time study.

### 3.2 Education, Adult and Continuing Education

To develop and enrich the knowledge and level of competence of those practicing in the field of adult education. Offered by face-to-face, blended and distance study. Part-time study. Some courses are cross-listed as degree credit in the Faculty of Education.

### Teaching English As a Second Language

The Certificate Program objectives are to meet local, national, as well as international needs of teacher development in ESL and EFL. The program provides a focused initial preparation for teaching ESL. Upon successful completion of the program, CTESL participants will be able to: Discuss the theoretical basis of second language

instruction; demonstrate a variety of effective ESL teaching techniques; and explain, in pedagogically relevant ways, the linguistic structures of the English language.

### 3.3 General Management, Applied Management

This certificate is designed to provide individuals in various work environments with the opportunity to combine management studies with applications relevant to their own careers and industries. Registrants select a particular specialization appropriate to their own development interests. Specializations are available in: police service, records management, retail management, organizational effectiveness and utilities management. Part-time study over two to three years.

### Financial & Management Accounting

This certificate program is designed to provide an intermediate level accounting education to anyone working with accounting information. The program provides a solid technical and conceptual foundation in accounting processes. Courses can be applied to an accounting designation or transferred for degree credit. Part-time study, evening classes.

### Human Resource Management

Human Resource Management requires leadership, teamwork, communication and strategic planning. Our program provides these skills through seven required and one elective course which will enable you to gain more specialized knowledge. You will benefit from this program whether you have some work experience or are new to the HR field. Part-time study over three years.

### Interdisciplinary Studies

This program provides a certificate to students completing a minimum of 200 contact hours within the Continuing Education Program Area. Students must identify their learning objectives and develop a program to meet these objectives. A specialized stream offered in partnership with the Manitoba Customer Contact Association, and the Learning Technologies Centre are also offered.

### Leadership & Management Development

This program develops leadership and management skills that can be applied immediately in the work environment.

### Municipal Administration

This certificate program provides an essential body of knowledge required to assume administrative responsibilities within small to mid-size municipalities in Manitoba. Available by independent study. Part-time study over four years.



### Quality Management

This certificate program offers a management approach to the design and implementation of quality programs. Offered by independent study. Part-time study over one year.

### 3.4 Health and Social Services, Applied Behaviour Analysis

This program combines degree credit courses and supervised practicum courses to help individuals understand and practice the principles and techniques of applied behaviour analysis. Part-time study over three years.

### Applied Counselling

The ACC Program provides knowledge of the counselling process and practical counselling skills development. It is for people who are involved in direct counselling through their paid or volunteer work. Participants' varied workplaces include: health care, education, social services, government, vocation employment counsellors, managers, and other work places where counselling takes place. Part-time study over one and a half to five years. The two specialization areas are general counselling and addiction studies.

### General Case Management

This program is for individuals who want to prepare for future positions in Canada's rapidly changing health and social service sectors by gaining a general background in case management. Part-time study over three years.

### Rehabilitation Case Management

This program prepares individuals to work in rehabilitation programs (e.g., medical, social and physical services, claims management, long term care, education). Participants learn varied case management models, principles of social and physical rehabilitation and functional and psychosocial theories in rehabilitation. Part-time study over three years.

### 3.5 United Way of Winnipeg Leadership Development Certificate Program,

This program is offered in partnership with the United Way of Winnipeg and provides extensive training to sponsored executives. Full-time program for 16 weeks.

### 3.6 Management/Professional Institute Affiliations, Canadian Institute of Management Certificate Program in Management and Administration\* (CIM)

To offer management training for managers and supervisors in industry, business, and government. four years part-time study.

### Certificate in Public Sector Management (CPSM) Co-sponsor: The Government of Manitoba

To offer management training for new and developing mid-managers employed by the provincial government. One-year part-time study program delivered in Blended Learning format integrating face-to-face sessions with online learning.

### Purchasing Management Association of Canada\* (PMAC)

The University of Manitoba participates with the PMAC in the offering the Strategic Supply Chain Management Program, a series of courses designed to develop proficiency in functional area processes and technical competencies, as well as a number of core and elective courses.

### Credit Union Institute of Canada (CUIC)\*

This program provides in-depth understanding of the key competency areas in credit union business management. Individual courses.

**NOTE:** \* Certificate awarded by an external agency.

### Distance and Online Education

#### Section 1: Welcome and General Information,

Distance and Online Education (DE) courses are open to all UM students and provide an opportunity for students to complete courses without attending classes. If you require a flexible study schedule, would like to study year round, or simply appreciate the convenience of studying at home, Distance and Online Education provides you the opportunity to complete your degree. Many students choose to enroll in on-campus and Distance and Online Education courses at the same time.

Over 140 degree credit courses are offered from the following faculties/schools: Agricultural and Food Sciences; Art; Arts; Clayton H. Riddell Environment, Earth, and Resources; Education; Engineering; Human Ecology; Kinesiology and Recreation Management; Science; and Social Work. Degree programs offered by distance include a Bachelor of Arts, Bachelor of Arts in Geography, Bachelor of Social Work, and a Post-Baccalaureate Diploma in Education.

To request a copy of the 2012-13 Distance and Online Education course calendar, call 474-8012 (toll free in Canada at 1-888-216-7011, ext. 8012), visit [umanitoba.ca/distance](http://umanitoba.ca/distance) or stop by Distance and Online Education at 188D Extended Education Complex.

### Online Course Delivery

All Distance and Online Education courses are offered online. Courses are hosted by a learning management system (LMS) where you can log on to the UM web server and access your course website in a secure environment.

Course features include: online course materials; audio/video resources; chat, student lounge and e-mail; and online assignment submission. Some courses also have required online audioconferences. For further information



regarding studying online, please see [umanitoba.ca/distance](http://umanitoba.ca/distance).

Required textbooks and/or audio/visual materials can be confirmed and ordered from the UM Book Store at [umanitoba.ca/bookstore](http://umanitoba.ca/bookstore). Early registration is recommended to ensure that you receive required materials prior to the start of term.

### Campus Manitoba

[www.campusmanitoba.com](http://www.campusmanitoba.com)

Altona	Cross Lake	Flin Flon	Swan River
Boissevain	Dauphin	Killarney	The Pas
Brandon	Deloraine	Portage la Prairie	Thompson
Carman	Eriksdale	Steinbach	White Bear

For a list of course offerings and tuition fees, contact: Campus Manitoba, Brandon University, Brandon, Manitoba R7A 6A9; telephone: 204-727-9668 (toll free at 1-866-445-0063); e-mail: [campus\\_mb@brandonu.ca](mailto:campus_mb@brandonu.ca)  
<http://www.campusmanitoba.ca/>

### Accessing Online Courses

The technologies required for studying by DE can vary depending on the course. Some courses may require a headset and microphone for online audioconferences or access to a DVD player.

Further information regarding requirements for accessing courses can be found in the DE Course Calendar or at [umanitoba.ca/distance](http://umanitoba.ca/distance). Specific course requirements can be found under *Syllabus Available* in the DE course search ("D" section numbers) in Aurora Student.

## Section 2: Registration , Initial Access Times

To determine your registration access time, please see the faculty for which you were admitted.

Fall (3 cr. hrs.)  
Winter (3 cr. hrs.)  
Fall/Winter (6 cr. hrs.)  
Dist Ed Winter/Summer (6 cr. hrs.)  
Summer (3 cr. hrs.)

## Section 3: Additional Information, 3.1 Examinations

Final exams are held in April, July, August, and December. You are expected to be available at the scheduled day and time, and should consider this when registering for courses.

Most students are able to write exams in their community; students living in Winnipeg must write at the UM Fort Garry Campus.

Campus Manitoba (CMB) offers courses at a variety of locations around the province through a consortium that includes: Brandon University, the University of Manitoba, the University of Winnipeg, Université de Saint-Boniface, University College of the North, Red River College, and Assiniboine Community College. CMB is a unique program in that students receive transfer of credit for courses offered by any of the participating institutions. Courses are offered using a variety of technologies including virtual classroom software, and web-based components. Campus Manitoba courses are offered in the following locations:

All course registration activities must be done using Aurora Student. You may register for DE courses and on-campus courses at the same time. It is recommended that you register for courses immediately upon your initial registration access time or immediately after the registration period opens.

The section number acts as an identifier for a specific course section. All DE section numbers are prefaced by the letter 'D', i.e. D01, D02, etc. It is important that you select the appropriate section number prior to course registration.

Please refer to the Registration System section or to [umanitoba.ca/distance](http://umanitoba.ca/distance) for registration dates and procedures. If you have questions regarding registering for DE courses, please call 474-8012 (toll free at 1-888-216-7011, ext. 8012).

### 2.1 Distance and Online Education Terms

September 2012 - December 2012  
January 2013 - April 2013  
September 2012 - April 2013  
January 2013 - July 2013  
May 2013 - August 2013

### 3.2 Distance and Online Education Course Fees

For information regarding Distance and Online Education tuition fees and any additional compulsory fees (e.g., registration fee, library fee, student services fees, etc.) please refer to [umanitoba.ca/registrar](http://umanitoba.ca/registrar) or call 474-9420. Undergraduate International Students are subject to an International Differential Fee; please refer to [umanitoba.ca/registrar](http://umanitoba.ca/registrar).



## Section 4: Contacting Distance and Online Education ,

For further information and program and , go to [umanitoba.ca/distance](http://umanitoba.ca/distance) or see the *Distance and Online Education Course Calendar*. To obtain a copy, call (204) 474-8012 (toll-free at 1-888-216-7011, ext. 8012), or go to [umanitoba.ca/distance](http://umanitoba.ca/distance).

### For other inquiries, contact:

Distance and Online Education  
188D Extended Education Complex  
8:30 a.m. - 4:30 p.m. Monday to Friday  
Telephone: (204) 474-8012  
Canada: Toll-Free 1-888-216-7011, ext. 8012  
Fax: (204) 474-7661  
Email: [de\\_info@umanitoba.ca](mailto:de_info@umanitoba.ca)  
[umanitoba.ca/distance](http://umanitoba.ca/distance)

## General Studies

### Section 1: Initial Access Times,

General Studies students registering for on-campus, distance education or online education courses may register starting in August 2012. For more information about initial access times and how to determine your specific time, please refer to the University of Manitoba home page: [umanitoba.ca](http://umanitoba.ca) or access Aurora Student in July (select: Enrolment & Academic Records, Registration, Registration Time & Status).

### Section 2: Registration Assistance,

Welcome to General Studies (Extended Education). We encourage you to review the [Admissions](#) section for information about registration, , rules, regulations and procedures.

Please take the time to become familiar with the [academic regulations and requirements](#) of the University of Manitoba and the specific academic regulations and requirements of General Studies (below) or check the website [umanitoba.ca/extended/general\\_studies](http://umanitoba.ca/extended/general_studies). As well, you may wish to seek the advice of a General Studies Student Advisor.

General Studies Student Advisors are available to assist you with course and program planning and to provide admission and registration information on a drop-in basis or by appointment throughout the year.

**Drop-in basis:** Monday through Friday, 9:00 a.m. to 3:00 p.m.

### 188 Extended Education Complex

**Telephone:** Monday through Friday, 8:30 a.m. to 4:30 p.m.  
**Student Advisor:** Karen Nickerson (204) 474-8330  
**Assistant Student Advisor:** Michelle Kidd (204) 474-7154  
**Toll free in Canada:** 1-888-216-7011 (ext. 7154 or 8330)  
**Fax:** (204) 474-7661 **Email:** [general\\_studies@umanitoba.ca](mailto:general_studies@umanitoba.ca)  
**Web:** [umanitoba.ca/extended/general\\_studies](http://umanitoba.ca/extended/general_studies)

## Section 3: Registration Information, 3.1 Instructions

You may register for up to a maximum of 30 credit hours in the combined Fall and Winter terms, and up to a maximum of 15 credit hours in any one term, including Summer Session.

For more information on how to register for courses using Aurora Student, check our website:

[www.umanitoba.ca/extended/general\\_studies](http://www.umanitoba.ca/extended/general_studies).

### 3.2 Returning Students

If you have successfully completed 24 credit hours or more, you are eligible to apply directly to a faculty or school providing you have met that faculty or school entrance requirements. For detailed information on other faculties and schools refer to the appropriate chapter listed in this catalog or check the Admissions Office Applicant Information Bulletin for entrance requirements and deadline dates ([www.umanitoba.ca/admissions](http://www.umanitoba.ca/admissions)). If you need help with course selection or have any concerns about your status, please contact a General Studies Student Advisor.

### 3.3 Visiting Students

New visiting students must apply for admission. Please contact the General Studies Office for information.

Visiting students who have been admitted and registered previously in at least one course are eligible to register in a subsequent session without reapplying for admission provided: your home university has not changed since you last registered in General Studies; you have a Letter of Permission from your home university approving the selected courses in which you wish to register; and, you provide the Letter of Permission to General Studies prior to registering.

### 3.4 Auditing Students

New auditing students must apply for admission. Please contact the General Studies Office for information. Auditing students must obtain written permission from the course instructor to audit a specific course. The written permission form would then be submitted to a General Studies Student Advisor who will manually register the student for the course (with the student's written consent).

## Section 4: Information Applicable to All General Studies Students,

### 4.1 Academic Assessment Policy

Academic Assessment gauges student success at the University. Formal academic assessment shall be done following each academic term for all General Studies students who have completed 30 credit hours or more of attempts. In order to be in "good standing" in General



Studies, a student must achieve a degree Grade Point Average (GPA) of 2.00 or greater at each assessment period. Students in "good standing" may continue in General Studies or, preferably, transfer to a target faculty.

Students who do not achieve a degree GPA of 2.00 will be placed "on probation", which will appear on the student's transcript. Once "on probation", a student will be allowed to register for another term (or terms). At each point of assessment, students "on probation" must achieve a term GPA of 2.00 in order to proceed. In order to clear probation, a student must achieve a degree GPA of 2.00. While "on probation", students are encouraged to consult the General Studies student advisor prior to registration and on a regular basis thereafter.

If a student does not succeed in achieving a term GPA of 2.00, they will be placed on "academic suspension" for one calendar year. A student on "academic suspension" is normally not allowed to register in another faculty or school at the University of Manitoba or to attend any other post-secondary institution during the time of suspension. Following the suspension period, a student may reapply for admission to General Studies.

#### 4.2 Credit Hour Policy

In an effort to assist students with academic decisions, all students who have completed 30 credit hours of study with General Studies will be required to meet with a student advisor before being allowed further registration. Until such time as the student meets with the advisor, a block will be placed on their record to prevent further registration.

#### 4.3 Transferring to Other Faculties or Schools

General Studies students will need to determine the specific subject and credit hour requirements of the faculty to which they plan to apply. This information is available in this catalog or from the Application Information Bulletin under your interested target faculty on the Admissions Office website at [umanitoba.ca/admissions](http://umanitoba.ca/admissions). Students are encouraged to apply to a faculty of their choice as soon as the requirements have been satisfied.

Entry to every faculty and school requires a formal application for admission to be submitted to the Admissions Office. Admission dates and forms are available at the Admissions Office, 424 University Centre or on the Admissions Office website at [umanitoba.ca/admissions](http://umanitoba.ca/admissions), click on *Apply for Admission*. It is always in your best interest to seek admission or transfer to a faculty or school as early as possible.

#### 4.4 Courses Available to General Studies Students

All courses in the following faculties and schools are available to General Studies students. Prerequisites may be required for some courses as specified in the :

Clayton H. Riddell Faculty of Environment, Earth, and Resources

Faculty of Agricultural and Food Sciences

Faculty of Arts

Faculty of Science

I. H. Asper School of Business

School of Art

All courses offered in the following faculties require teaching faculty written approval before registering, with the exception of courses open to all students as listed under University 1:

Faculty of Architecture

Faculty of Education (5000 level courses only)

Faculty of Engineering

Faculty of Human Ecology

Faculty of Kinesiology and Recreation Management

Faculty of Nursing

Faculty of Social Work (students with less than 30 credit hours)

Marcel A. Desautels Faculty of Music

### Off-Campus Study

#### Section 1: Initial Access Times,

You can register for Off-Campus Study and on-campus courses in the same transaction. For more information about initial access times and how to determine your specific time, please refer to the University of Manitoba home page at [umanitoba.ca](http://umanitoba.ca) or please refer to the registration information in the *Calendar* ([umanitoba.ca/calendar](http://umanitoba.ca/calendar)).

#### Section 2: Registration and General Information,

A flexible and convenient alternative, Off-Campus Study allows students to take degree courses at various community sites within Winnipeg, including the U of M Bannatyne Campus, Vincent Massey Collegiate, Gray Academy of Jewish Education, the McLeod Adult Education Centre and the Canadian Mennonite University.

Students can register for Off-Campus Study courses on-line at [umanitoba.ca](http://umanitoba.ca). See the information in the *Calendar* ([umanitoba.ca/calendar](http://umanitoba.ca/calendar)) for details on registration. Contact Off-Campus Study for more information on courses or for assistance concerning registration procedures. For questions regarding your academic program, contact a student advisor in your faculty or school.

#### 2.1 Registration



It is your responsibility to be familiar with the requirements of your program and to complete the prerequisites for any courses you plan to take.

Where faculties/schools require written consent, for courses where written consent of the department head or instructor is required, you must submit the written consent to your faculty/school prior to registering.

## 2.2 Fall and Winter (September 2012 - April 2013)

Registration for all courses scheduled in Fall and Winter begins mid-July in accordance with the initial access times that apply to your faculty or school for registration as outlined in the *Calendar*, and continues until early September for courses beginning in September, and until mid-January for courses beginning in January.

The period for late registration and registration revisions is usually from the first day of classes in September until mid-September for all Fall and Fall/Winter courses. A late fee will be assessed on all registrations during this period.

## 2.3 Fee Information

When you register on-line, one of the transactions you must complete is a fee assessment, which will indicate the exact amount owing and the fee payment deadline.

## 2.4 Examinations

Final examinations are normally scheduled for the same location and time as the class. In some cases, examinations may be written at the University of Manitoba Fort Garry Campus. The examination schedule is published well in advance of the examination period. Students are expected to check the schedule and be available to write examinations as scheduled.

## 2.5 For Information

**Off-Campus Study:** 188 Extended Education Complex  
8:30 a.m. – 4:30 p.m., Monday to Friday  
**Telephone:** (204) 474 8019  
**Toll-Free in Canada telephone:** 1 888 216 7011 extension 8019  
**Fax:** (204) 474 7661  
**Website:** [umanitoba.ca/extended/off-campus](http://umanitoba.ca/extended/off-campus)

### Section 3: Off-Campus Study Courses

Course offerings include Creative Writing, Anthropology, Physics, Native Studies, Nutrition, Yiddish, Geology and Nursing. Check our website for up-to-date course listings and information: [umanitoba.ca/extended/off-campus](http://umanitoba.ca/extended/off-campus).



## Faculty of Human Ecology

**Dean:** Gustaaf P. Sevenhuysen

**Associate Dean(s):** Michael Eskin

**Campus Address/General Office:** 209 Human Ecology Building

**Telephone:** (204) 474- 8508

**Fax:** (204) 474-7592

**Email Address:** [h\\_ecology@umanitoba.ca](mailto:h_ecology@umanitoba.ca)

**Website:** [umanitoba.ca/faculties/human\\_ecology](http://umanitoba.ca/faculties/human_ecology)

**Academic Staff:** Please refer to the Faculty website at [http://www.umanitoba.ca/faculties/human\\_ecology/](http://www.umanitoba.ca/faculties/human_ecology/)

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## SECTION 1: Degree Programs Offered

Program/Degree	Years to Complete	*Total Credit Hours
Bachelor of Health Sciences	4*	120
Bachelor Health Studies	4*	120
Bachelor of Human Ecology	4*	120
Bachelor of Human Ecology (Family Social Sciences)	4*	120
The After Degree Program in Family Social Sciences (Bachelor of Human Ecology)	2**	60
Bachelor of Science (Human Nutritional Sciences)	4*	120
Second Degree Option in Human Nutritional Sciences	2**	60
Bachelor of Science (Textile Sciences)	4*	120 (123 for Eng. Sci. option)

\*This includes one year (30 credit hours) of study in University 1.

\*\*Approximate as prerequisites must be met in order to progress.

### 1.2 Available Minors ,

Family Social Sciences Minor

Human Nutrition and Metabolism Minor

Health Sciences and Health Studies Minors

Textile Sciences Minor

### 1.3 Available Options, Concentrations and Streams, Family Social Sciences Options

Aging and Developmental Health Option

Child and Youth Developmental Health Option

Family Economic Health Option

Family Violence Option

Social Development Option

### Human Nutritional Sciences Options and Concentrations

Foods Option

Food Industry Option: Food Industry Management  
Concentration; Food Product Development Concentration;  
Quality Assurance Concentration

Nutrition Option

### Second Degree in Human Nutritional Sciences:

Dietetics Focus; Foods Focus; Human Nutrition Focus

Undergraduate Calendar

### Textile Sciences Streams

Product Development Stream

Textile Development Stream: Engineering Sciences Option;  
Exercise and Sports Science Option; Microbiological  
Sciences Option

### The Interfaculty Option in Aging

### 1.4 Professional Designations,

Graduates from the Human Nutritional Sciences program who have completed the Dietitians of Canada (DC) accredited undergraduate degree with courses as stipulated by DC may apply for a dietetic internship either through Pre-Selection by the Manitoba Partnership Program (MPP) or by application to dietetic internship programs in the final year of their degree or after completion of their degree.

Home economists in Manitoba, and other provinces, are regulated by legislation. Graduates may apply to the Manitoba Association of Home Economists (MAHE) for interim professional home economist (IPHE) status, and subsequently qualify as a professional home economist (PHEc).

## SECTION 2: Admission Requirements

Admission requirements are described in an applicant information bulletin that is available together with application deadline dates and forms from the Admissions Office, Enrolment Services, 424 University Centre. Detailed admission information is posted on the university website: [http://www.umanitoba.ca/student/admissions/application/ deadlines/human\\_ecology/](http://www.umanitoba.ca/student/admissions/application/ deadlines/human_ecology/).

### General Entrance Requirements to the Faculty of Human

**Ecology:** A minimum adjusted grade point average (AGPA) of 2.0 in at least 24 credit hours of University 1, including 6 credit hours from Arts and 6 credit hours from Science to total 12 credit hours, plus 12-18 credit hours of other



University 1 courses, for a total of 24-30 credit hours. Students must complete at least 6 more credit hours of Arts or Science courses once admitted to the Faculty. Beginning in September, 2012, high school students will be eligible to apply for direct entry to the Faculty. Detailed information is posted on the University website (above).

#### Other requirements for University study

High school prerequisites required for University level courses in certain programs: Mathematics 40S (pre-calculus or applied) and Chemistry 40S are required for the science requirements in Human Nutritional Sciences, the Interdisciplinary Health program, and textiles courses in Textile Sciences. Students who consider subscribing to the Engineering Sciences option in Textile Sciences must have pre-calculus Mathematics 40S, Physics 40S, and Chemistry 40S. Students planning to take BIOL 1020 for any program must have Biology 40S and any Grade 12 Mathematics course.

Minimum Adjusted GPA for consideration: 2.0.

The written English and Mathematics requirements are satisfied by required courses HMEC 2000 (or the former HMEC 2030) and STAT 1000 within the Human Ecology program. HMEC 2000 will be available to students upon admission to the Faculty of Human Ecology.

For students wishing to choose the focused approach for entry to the Faculty of Human Ecology, the course requirements for each of the programs or areas of concentration offered by the Faculty of Human Ecology are described in the U1 Start Book found at <http://umanitoba.ca/student/u1/startbook/index.html>.

#### Direct Admission into the Faculty of Human Ecology from High School

To be eligible for admission based on high school, students must have: General Requirements to the University of Manitoba, plus a minimum 85% average over the following, with no less than 60% in each course:

- English 40S
- Chemistry 40S, Biology 40S, or a Mathematics 40S
- A third 40S course

See Applicant Bulletin for complete details.  
[http://umanitoba.ca/student/media/direct\\_entry\\_guide.pdf](http://umanitoba.ca/student/media/direct_entry_guide.pdf).

### SECTION 3: Faculty Academic Regulations

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. In addition, the Faculty of Human Ecology has regulations and requirements, published below, that apply specifically to its students.

#### 3.1 Prerequisite, Corequisite, and Course Availability: Definitions,

**Prerequisite:** If a course is prerequisite to a second course, the prerequisite must be met in order to continue in the second course. The department giving the second course may require a minimum grade of 'C' in the first course to register in the second course. Some inactive (legacy) courses may be used as prerequisites. Please check with an Academic Advisor in Human Ecology.

**Corequisite:** If a first course is a corequisite to a second course, the first course (unless previously completed) must be taken in the same term as the second course.

**Course Availability:** Not all courses listed in this Calendar are offered every year. Students are referred to the on-line calendar for courses offered in the year. Human Ecology courses at the 3000 and 4000 level are available only to students registered in the Faculty of Human Ecology or one of the minors or options associated with the Faculty. Courses at the 3000 and 4000 level may be taken with written permission from an Academic Advisor as long as there is space.

#### 3.2 Scholastic Standards, Graduation and Grade Point Average

To graduate, a student must have passed 120 credit hours acceptable for credit in the current degree program and have obtained a minimum of 240 quality points. This is equivalent to a Degree Grade Point Average of 2.0. A pass indicates a grade of 'D' or better. A student's Degree Grade Point Average (DGPA) will be determined from the number of effective courses which apply at a particular stage. The effective courses consist of all courses passed, in addition to all failures which have not been cleared, or substituted for, in the students record. A maximum of 150 credit hours (25 courses or the equivalent) may be attempted in order to obtain the 120 credit hours. Effective for the admissions cycle beginning September 2009, to graduate, students in the Interdisciplinary Health Program (IHP) must attain a Degree Grade Point Average of 2.5 (300 quality points on 120 credit hours) on graduation and meet the probation standards as stated below.

#### Assessment

The status of each student will be assessed in May of each year in which a student is registered. Assessments can include the following comments: Faculty minimum met (grade point average meets the standards listed below); Dean's Honour (see 3.8); probationary status (see below); suspension (see below); suspension - all attempts used (see below); academic warning to indicate a grade point average between the minimum required and the DGPA requirement of 2.0. There is a maximum of 30 credit hours of attempts allowed for each academic program; once those attempts are used (repeated courses, grades of F or D), it is impossible to graduate.

#### Probationary Standing



Students must achieve or exceed the following standards at the specified stages in their academic careers. Failure to obtain the standard results in probation. Once placed on probation, students who fail to meet the appropriate performance level at the next assessment following the next

**Effective Credit hours**

24-30 hours  
33-60 hours  
63-90 hours  
93-117 hours  
120+ hours

**Probationary Standards – Interdisciplinary Health Program**

Effective Credit hours  
24-30 hours  
33-60 hours  
63-90 hours  
93-117 hours  
120+ hours

registration will be academically suspended. A student is not permitted to be on probation for two consecutive years.

**Probationary Standards**

**Minimum DGPA**

1.80  
1.85  
1.90  
1.95  
2.00

**Minimum DGPA**

2.00  
2.20  
2.40  
2.50  
2.50

**Suspension**

Suspended students must remain out of the Faculty of Human Ecology for one academic year from the date of suspension and must apply for reinstatement at the Admissions Office no later than May 1.

Where mathematically possible for a suspended student to complete the degree by repeating failed courses, a suspended student shall be automatically reinstated after remaining out of the faculty for one calendar year, or by achieving a degree GPA above the probationary standard.

**Suspension (All Attempts Used)**

Where it is mathematically impossible for a student to complete the degree by repeating failed courses, a suspended student, after remaining out of the faculty for one calendar year, may attempt reinstatement. By completing at least 12 credit hours in one term with a minimum 'D' grade in all courses and a term grade point average of at least 2.0, the student will be reinstated. The student will start the program afresh, with previous grades of 'C' or better applicable to the program.

**3.3 Part-time Students,**

The maximum time allowed for completion of the degree is 10 years. After completion of 24 credit hours, part-time students will be evaluated each May and must conform to the minimum performance levels.

**3.4 Repeating Courses,**

A student may repeat any course for the purpose of attaining a better grade. The latest registration of a repeated course will count in GPA calculations. There are no supplemental examinations for students who have failed final or deferred examinations.

**3.5 Challenge for Credit,**

A student wishing to challenge a course for credit should contact an Academic Advisor. Letter grades are granted upon completion of the course that is challenged for credit. A list of courses for challenge is available in the General Office. An application is required.

**3.6 Transfer of Credit,**

See the chapters on [Admissions and Academic Regulations and Requirements](#) at the beginning of this *Calendar*. Students from faculties other than University 1 or from other institutions must make an appointment with an Academic Advisor by the end of their first academic year to arrange for transfer of credit.

**3.7 Appeals of Academic Regulations,**

The Faculty Committee on Student Standing considers petitions from students who request special consideration with respect to rules and regulations governing their programs of study and qualification for graduation.

**3.8 Dean's Honour List,**

Eligible students who achieve term Grade Point Averages of 3.5 or higher in at least 12 credit hours per term will be included in the Deans Honour List.

**3.9 Degree With Distinction,**

Students who graduate with a degree GPA of 3.75 and higher will receive a degree with distinction.

**3.10 Work Permit for Study Purposes ,**

International students who are registering for courses or programs that require work placement must obtain a valid **Work Permit**, in addition to maintaining a valid Study Permit. Work placement includes, but is not limited to, any **paid or unpaid** practicum, internships, work experience, field placement, and co-op programs that are a required component for the completion of their degree, diploma or certificate. Please contact your program advisor or the [International Centre for Students](#) for further information.



### 3.11 Release and Indemnification Forms ,

In elective courses, students may be required to sign a release form for off-campus activities.

### 3.12 Written English and Mathematics Requirements,

The written English and Mathematics requirements are satisfied by required courses HMEC 2030 and STAT 1000 within the Human Ecology program. HMEC 2030 will be available to students upon admission to the Faculty of Human Ecology.

## SECTION 4: Program and Graduation Requirements

Within an overall health promotion orientation, the mission of the Faculty of Human Ecology is to sustain, develop and transmit knowledge that supports individuals and their interactions in families and communities as they enhance their quality of life and improve their physical and social environments. Our teaching and research integrates both basic and applied sciences, incorporating innovative technologies and emergent areas of knowledge. The Faculty of Human Ecology contributes to the health of people in Manitoba, Canada and elsewhere by promoting good health. This health promotion contribution is distinct from the treatment of ill health. The Faculty uses the WHO (World Health Organization) definition of health as the framework for planning and activities: *A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.* The Faculty uses the Ottawa Charter definition of health promotion: *The process of enabling people to increase control over, and to improve, their health (Ottawa Charter for Health Promotion, 1986).*

Programs in the Faculty of Human Ecology are specialized to meet the needs of students, employers and society. Scholarship, learning and research range from metabolic and clinical aspects to psychological, behavioural and community aspects. The Faculty's work extends along the continuum from cellular and biochemical aspects to health related products and policies. Study in the Faculty in one of seven undergraduate programs offers background that can lead to career opportunities in business and industry, dietetics and institutional administration, education, social services, government and research. We are one of the founding units of the University of Manitoba; our graduates

### Admitted in September 2012 or Later:

- A faculty core of 9 credit hours consisting of:

#### Course No.

HEAL 2600	Integration of Health Determinants of Individuals
HMEC 2000	Research Methods and Presentation
HMEC 3000	Introduction to Social Epidemiology

- Plus a minimum of 51 additional credit hours within the Faculty;
- Plus a minimum of 30 additional credit hours outside the Faculty of which at least 6 credit hours must be from the Faculty of Science and six from the social sciences;

have contributed to improving human health and well-being locally, nationally, and internationally for 95 years.

**Students entering the Faculty will select one of the following six programs:**

- Family Social Sciences Program
- Health Sciences Program
- Health Studies Program
- Human Ecology Program
- Human Nutritional Sciences Program
- Textile Sciences Program

**In order to qualify for a degree, students must complete the 120 credit hours (123 for TS, Eng. Sci. option) specified for the selected program. Elective choices provided in each program can permit students to transfer between them; however, this opportunity decreases as students progress. Students who transfer to another program must meet the full requirements of that program. There is a quota in effect for intake to each program per academic year. The quota may affect movement into a program after the September intake.**

### 4.1 Advisement Content

The Faculty will provide entering students with orientation information and will refer a student to a program advisor if the student requests. The program advisor will be a Faculty member from the student's department or program. Individual programs of study for returning students will be planned in consultation with departmental representatives at sessions scheduled in March of each year. All returning students in the Faculty of Human Ecology must submit a program plan for the succeeding year before the end of the Winter term.

### 4.2 Faculty Program Requirements Content

The following are the guidelines for the program requirements in the Faculty. The courses outlined for each program in the sections which follow, meets these basic requirements.

- Plus a minimum of 12 additional credit hours of free electives leading to a degree requirement of 120 (123) credit hours.

#### Notes:

1. Students in the Interdisciplinary Health Program complete PSYC 2250 or HMEC 2000. **Credit Hours**
2. Students admitted before September, 2005 and graduating after May, 2005, will make the following program adjustments because of the deletion of the former HMEC 4080 (HMEC 4080) as a degree requirement.
  - Family Social Sciences students must complete an additional 3 credit hours of Faculty electives at the 3000 or 4000 level.
  - Human Ecology program students must complete an additional 3 credit hours of Faculty electives.



- Human Nutritional Sciences students must complete an additional 3 credit hours of free electives.
- Textile Sciences students must complete an additional 3 credit hours of free electives.

#### 4.3 Program Electives Content

Courses within each program fall into one of three categories:

- Department electives must be chosen from within the program department.
- Outside electives must be chosen from a Faculty other than Human Ecology.
- Free electives may be chosen from within or outside the Faculty of Human Ecology.

#### 4.4 Family Social Sciences Content

**Head:** Caroline Piotrowski

Applying knowledge from the social and physical sciences, students in Family Social Sciences examine factors affecting human psychosocial health and wellbeing. They study

3. Students admitted between September 2005 and September 2012 are urged to seek academic advising assistance for advice regarding completion of core course requirements.

human development from infancy to old age within the context of families, communities, and culture.

Students are required to choose at least one area, or option, in which to focus their studies. The name of their option will appear as a "comment" on their transcripts. They may select from the following options: 1) Aging and Developmental Health Option; 2) Child and Youth Developmental Health Option; 3) Family Economic Health; 4) Family Violence; 5) Social Development. Family Social Sciences graduates are permitted to complete any option after their degree as a Special Student. Not every Family Social Sciences course will be offered every year. A chart providing course rotation information is available on the Family Social Sciences web page.

The Family Social Sciences program can provide students with academic preparation or complementary courses for programs such as Law, Social Work, Education or Graduate Studies.

In March of each year, program planning sessions are provided to assist students in their selection of courses for subsequent years of study.

#### 4.4 Students Admitted in September 2012 or Later

Courses to be taken by all Family Social Sciences students:

Course No.		Credit Hours
STAT 1000	Basic Statistical Analysis	3
One of: STAT 2000 or COMP 1260	Basic Statistical Analysis 2, Introductory Computer Usage 1, or any other Science course	3
One of: ECON 1010, ECON 1020, ECON 1210 or ECON 1220	Principles of Economics, Introduction to Canadian Economic Issues, or Introduction to Global and Environmental Economic Issues and Policies	3-6
HMEC 2000	Research Methods and Presentation	3
HMEC 3000	Introduction to Social Epidemiology	3
HEAL 2600	Integration of Health Determinants of Individuals	3
FMLY 1010	Human Development in the Family	3
FMLY 1012	Introduction to Social Development	3
FMLY 1020	Family Issues across the Lifespan	3
FMLY 1420	Family Management Principles	3
FMLY 2350	Multicultural Family Issues	3
FMLY 2400	Family Financial Health (or FMLY 2070)	3
FMLY 3780	Introduction to the Development of Programs for Children and Families	3
FMLY 3790	Introduction to the Evaluation of Programs for Children and Families	3
PSYC 1200 or SOC 1200	Introduction to Psychology or Introduction to Sociology	6
	Department Electives	24
	Faculty Electives (3000 or 4000 level)	3
	Outside Electives	12-15
	Free electives	30

#### NOTES:



- 1) If students choose ECON 1010 and 1020 (former 1200) or ECON 1210 and 1220, 12 credit hours of outside electives are required.
- 2) All courses listed in the general Family Social Sciences section (above) are required. In addition, students must choose at least one area, or option, in which to focus their studies. In the following section, the courses required to fulfill each option are listed. They will partially meet department, outside and free elective requirements. More courses will be required to complete the 120 credit hour degree. Students are encouraged to take more than one option. Each option must consist of 18 non-overlapping credit hours; that is, no course can satisfy the requirements of more than one option.

#### 4.4 Aging and Developmental Health Option

This option is also part of the Interfaculty Option in Aging, which can fulfill the requirement for an option within the Family Social Sciences major.

HMEC or SWRK or REC 2650	Social Aspects of Aging	3
FMLY 4300	Field Experience	6
NURS or KIN 2610	Health and Physical Aspects of Aging	3
	<b>At least 3 credit hours from:</b>	3
FMLY 3220	Death and the Family	
FMLY 3240	Families in Later Years	
FMLY 4220	Aging and Risk in a Global Context	3
	<b>At least 3 credit hours from:</b>	3
NURS 2200	Selected Topics in Aging and Health	
PSYC 2370	Developmental Psychology from Adolescence to Old Age	
PSYC 3460	Abnormal Psychology	
PSYC 3490	Individual Differences	
PSYC 3610	Memory	
KIN 4500	Physical Activity and Aging	
REC 4250	Leisure and Aging	
RLGN 1410	Death and Concepts of the Future	
SOC 2490	Sociology of Health and Illness	
SOC 2620	The Sociology of Aging	
SOC 3510	Population Dynamics and Change	
SOC 3540	The Sociology of Health Care Systems	

#### 4.4 Child and Youth Developmental Health Option

FMLY 2600	Foundations of Childhood Developmental Health	3
FMLY 3600	Adolescents in Families and Societies	3
FMLY 3330 or FMLY 4604	Parenting and Developmental Health or Children in Adversity	3
	At least nine credit hours from:	9
ANTH 2300	Anthropology of Childhood	
FMLY 2800	Family Violence	
FMLY 3610	Developmental Health of Children and Youth	
FMLY 3800	Conflict Resolution in the Family	
FMLY 3802	Intimate Partner Violence	
FMLY 3806	Children, Violence and Rights	
FMLY 4330	Management of Family Stress	
FMLY 4602	Family Relationships, Health and Well-Being	
FMLY 4480	Work and Family Issues	
HNSC 1210	Nutrition for Health and Changing Lifestyles	
HNSC 2130	Nutrition through the Life Cycle	
NURS 4440	Health Promotion in the Community	
NURS 4420	Prevention of Illness	
PSYC 2310	Adolescent Development	
	Developmental Psychology from Adolescence to Old Age	
PSYC 2370	Behaviour Modification Principles	
PSYC 2440	Behaviour Modification Applications	
PSYC 2450	Language Acquisition	
PSYC 2860	Experimental Child Psychology	
PSYC 3360	Youth, Crime and Society	
SOC 3830		



#### 4.4 Family Economic Health Option

	<b>At least 9 credit hours from:</b>	9
FMLY 3400	Families as Consumers	
FMLY 4330	Management of Family Stress	
FMLY 4400	Family Economics: Poverty and Wealth	
FMLY 4460	Family Financial Counselling	
FMLY 4480	Work and Family Issues	
	<b>At least 9 credit hours from (at least 3 credit hours must be selected from courses numbered 3000 or 4000):</b>	
ACC 1100	Introductory Financial Accounting	
ACC 1110	Introductory Managerial Accounting	
ANTH 2550	Culture and the Individual	
ANTH 2430	Ecology, Technology and Society	
ECON 2280	Social Welfare and Human Resources	
ECON 2310	Canadian Economic Problems	
ECON 2350	Community Economic Development	
ECON 2360	Women in the Canadian Economy	
ECON 2390	Introduction to Environmental Economics	
ECON 2400	Introduction to Energy Economics	
ECON 2540	Political Economy 1: Production and Distribution	
ECON 2550	Political Economy 2: Economic Growth and Fluctuations in a Global Economic Environment	
ECON 3390	Development Economics	
ECON 3720	Urban and Regional Economics and Policies	
FIN 2200	Corporation Finance	
FIN 3420	Security Analysis	
FMLY 3012	Social Development Policies	
FMLY 3240	Families in Later Years	
FMLY 3610	Developmental Health of Children and Youth	
FMLY 4012	Theories of Social Development	
FMLY 4220	Aging and Risk in a Global Context	
FMLY 4602	Family Relationships, Health and Well-Being	
GEOG 1280	Introduction to Human Geography	
GEOG 2210	Economic Geography	
GMGT 2030	Administrative Theory	
GMGT 2440	Human Resource Management	
HNSC 1210	Nutrition for Health and Changing Lifestyles	
HNSC 2130	Nutrition through the Life Cycle	
IDM 3000	Aboriginal Business Context: Influences and Impacts	
MKTG 2210	Fundamentals of Marketing	
MKTG 3230	Consumer Behaviour	
NATV 1200	The Native Peoples of Canada	
NATV 1220	The Native Peoples of Canada, Part 1	
NATV 1240	The Native Peoples of Canada, Part 2	
NURS 4440	Health Promotion in the Community	
SOC 3370	Sociology of Work	
SOC 3510	Population Dynamics and Change	
SOC 3470	Political Sociology	
SOC 3870	Social Inequality	
TXSC 1600	Textiles for Living	
TXSC 1610	Textiles, Product and Consumers	
TXSC 2600	Textiles for Apparel End Uses	
TXSC 2610	Textiles for Non Apparel End Uses	
TXSC 2620	Consumer and Organizational Behaviour Toward Textile Products	
TXSC 3600	Consumer and Organizational Behaviour Toward Textile Products	

#### 4.4 Family Violence Option

FMLY 2800	Family Violence	3
FMLY 3802 or FMLY 3806	Intimate Partner Violence or Children, Violence and Rights	3
FMLY 4802	Family Violence Prevention	3
	<b>At least 9 credit hours (at least 3 credit hours must be selected from courses numbered 3000 or 4000):</b>	9
ANTH 3380	Anthropology and Contemporary Social Issues	



FMLY 3610	Developmental Health of Children and Youth
FMLY 3800	Conflict Resolution in the Family
FMLY 4220	Aging and Risk in a Global Context
FMLY 4330	Management of Family Stress
FMLY 4602	Family Relationships, Health and Well-Being
FMLY 4604	Children in Adversity
NATV 1240	The Native Peoples of Canada, Part 2
NURS 3300	Women and Health
NURS 3400	Men's Health: Concerns, Issues and Myths
PSYC 2460	Dyadic Relationships
SOC 2370	Ethnic Relations
SOC 2510	Criminology
SOC 3700	Sociology of Law
SOC 3790	Women, Crime and Social Justice
SOC 3830	Youth, Crime, and Society
SWRK 3130	Contemporary Canadian Social Welfare
WOMN 3560	Feminist Perspectives on Violence Against Women

#### 4.4 Social Development Option

FMLY 2012	Development, Conflict, and Displacement	3
FMLY 3012	Theories of Social Development	3
FMLY 4012	Social Development Policies	3
	<b>Three (3) credit hours from:</b>	3
HMEC or SWRK or REC 2650	Social Aspects of Aging	
FMLY 2800	Family Violence	
FMLY 3240	Families in Later Years	
FMLY 3400	Families as Consumers	
FMLY 3800	Conflict Resolution in the Family	
FMLY 4220	Aging and Risk in a Global Context	
FMLY 4330	Management of Family Stress	
FMLY 4400	Family Economics, Poverty and Wealth	
FMLY 4602	Family Relationships, Health and Well-Being	
FMLY 4604	Children in Adversity	
FMLY 4480	Work and Family Issues	
	<b>(Six) 6 credit hours from:</b>	6
ANTH 1220	Cultural Anthropology	
SOC 2320	Canadian Society and Culture	
SOC 3890	Power and Inequality in Comparative Perspective	
SWRK 2050	Community and Organizational Theory	
NATV 1220	The Native Peoples of Canada, Part 1	
NATV 1240	The Native Peoples of Canada, Part 2	
LABR 3220	Global Sweatshops, Global Struggles	
POLS 1000	Democracy and Development	
POLS 2070	Introduction to Canadian Government	
POLS 4710	Political Theory and the Family	
WOMN 1600	Introduction to Women's and Gender Studies in the Social Sciences	

#### 4.5 The After Degree Program in Family Social Sciences Content

An After Degree Program (ADP) in Family Social Sciences is offered to students who have completed a previous undergraduate degree. ADP students must complete 60 credit hours in total to earn their second degree in Family Social Sciences. All Family Social Sciences U1 prerequisites are waived. In order to facilitate ADP students completing the program in a timely manner, they will automatically be permitted (without special permission from the course

instructor) to take Family Social Sciences 2000 level prerequisites as corequisites for any required Family Social Sciences 3000 and/or 4000 level courses. Please consult with the Academic Advisor when planning programs prior to registration. ADP students are required to choose at least one option and meet its requirements at the second year level and beyond. These 18 credit hours may include courses external to the Faculty of Human Ecology that are required to complete an option. If a second option is not chosen, then these credit hours must be taken within the department. There are no free electives in the ADP.



**Students admitted in September 2012 or Later**

Faculty of Human Ecology Core Courses (any 6 credit hours. See note 3):

**At least 6 credit hours from:**

HMEC 2000, HMEC 3000, or HEAL 2600	Research Methods and Presentation, Introduction to Social Epidemiology, or Integration of Health Determinants of Individuals (see note 3)	6 - 9
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**Family Social Sciences Requirements** (see note 4):

FMLY 2350	Multicultural Family Issues	3
FMLY 2400	Family Financial Health	3
FMLY 3780	Introduction to the Development of Programs for Children and Families	3
FMLY 3790	Introduction to the Evaluation of Programs for Children and Families	3

**And a minimum of 6 credit hours from** (see note 5):

FMLY 2600	Foundations of Childhood Developmental Health	6
FMLY 2800	Family Violence	
FMLY 2012	Development, Conflict, and Displacement	
HMEC/SWRK/ REC 2650	The Social Aspects of Aging	

**Family Social Sciences Option** (see note 6)

Family Social Sciences Electives (see note 7)	15-18	
STAT 1000	Basic Statistical Analysis (see note 8)	3
<b>TOTAL</b>	<b>60</b>	

**NOTES:**

1. The same entrance requirements will be applied to ADP students in order to maintain current Faculty of Human Ecology standards.
2. Basic social science knowledge is assumed because ADP students have previously completed an undergraduate degree; waiving U1 requirements for FSS courses acknowledges the skills, background and maturity of this particular group of students.
3. This choice provides students who have previously taken a research methods course with the option of avoiding redundancy in their program. Students are free to take all three core courses if they feel it would benefit them. If students select 9 credit hours of core courses, the FSS electives component is reduced to 15 credit hours.
4. This set of courses is currently required of all undergraduate FSS students and is required for students in the ADP.
5. Students are required to take a minimum of any two (6 credit hours) of the introductory level courses across options. Review the list of options found in the 120 credit hour undergraduate degree program to assist with planning for prerequisites for higher level courses.
6. Each FSS option is a total of 18 credit hours; ADP students will have taken at least one 2000 level course (3 credit hours) required by the chosen option as part of their program requirements, leaving the remaining 15 credit hours to be completed to fulfill the option. Completion of the option may include courses external to the Faculty of Human Ecology that are required to complete an option.
7. ADP students are encouraged to specialize in two options simultaneously to strengthen and broaden their expertise. If a second option is chosen, these credit hours may include courses external to the Faculty of Human Ecology that are required to complete the option. If students have completed the 2000 level course required for the second option, the requirement to complete the option is 15 credit hours. If a second option is not chosen, then these credit hours must be taken within the department.
8. Students who have previously completed an undergraduate statistics course can either transfer it in directly (if already assessed as equivalent) or can request to have it assessed for advanced standing; if successful, students will be required to add 3 credit hours to their program from courses selected from the Department of Family Social Sciences.

**4.6 The Family Social Sciences Minor Content**

A minor in Family Social Sciences is offered by the Department of Family Social Sciences. Students must complete 18 credit hours, distributed as follows: Six (6) credit hours in Family Social Sciences at the 1000 level, and at least three (3) credit hours in Family Social Sciences at the 2000 level, and at least three (3) credit hours in Family Social Sciences at the 3000 or 4000 level, with no more than 6 credit hours at the 1000 level.

Students must check with their home Faculties to see if the Family Social Sciences minor is available in their programs.

**4.7 Human Ecology Program Content**

**Chair:** Gustaaf Sevenhuysen

The Human Ecology program is one of five degree choices in the Faculty of Human Ecology and is designed for

students who have career goals that require basic preparation in each of the major subject areas of the faculty. The program provides course work in Human Nutritional Sciences, Textile Sciences and Family Social Sciences as well as the requirement of an 18 hour Minor in a related field – the minor designation will also appear on the student's transcript. The program has a large elective course component to permit students to select courses to meet individual interests and career options. Persons who intend to select this program are advised that high school Chemistry 40S and Mathematics 40S are prerequisites to CHEM 1300 University 1: Structure and Modeling in Chemistry, which is highly recommended as an elective course.

Before entering continuing years in the Faculty of Human Ecology, the overall program must be planned in consultation with the Chair or committee member. Course planning sessions are held in March of each year.



**Students Admitted in September 2012 or Later**

Course No.	Course Name	Credit Hours
ECON 1010 and 1020	or ECON 1210 and ECON 1220 Economics	6
	Six credit hours from ECON 2280, ECON 2310, ECON 2390, ECON 2400, ECON 2540, ECON 2550	6
FMLY 1020	Family Issues across the Lifespan	3
	Six credit hours from FMLY 1010, FMLY 1420 or FMLY 1012	6
FMLY 2350	Multicultural Family Issues	3
HMEC 2000	Research Methods and Presentation	3
HMEC 3000	Introduction to Social Epidemiology	3
HEAL 2600	Integration of Health Determinants of Individuals	3
HNSC 1200	Food: Facts and Fallacies	3
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
HNSC 2130	Nutrition through the Life Cycle	3
NATV 1200	The Native Peoples of Canada, or	6
NATV 1220 and NATV 1240	The Native Peoples of Canada Part 1 and The Native Peoples of Canada Part 2	
STAT 1000	Basic Statistical Analysis 1	3
PSYC 1200	Introduction to Psychology	6
Or		
SOC 1200	Introduction to Sociology	
TXSC 1600	Textiles for Living	3
TXSC 1610	Textiles, Product and Consumers	3
	Science course as defined by Faculty of Science	3
	Faculty Electives (at least 9 credit hours at 3000 or 4000 level; HMEC 4090, Practicum is highly recommended)	24
	Minor/option	18

**Recommended Minors/Options:**

Canadian Studies, Family Social Sciences, Human Nutrition and Metabolism, Labour and Workplace Studies, Management, Native Studies, Option in Aging, Political Studies, Sociology, Urban Studies, Women and Gender Studies		
Free electives		12

**4.8 Human Nutritional Sciences Content**

**Head:** James D. House

Students majoring in Human Nutritional Sciences will choose the Nutrition Option, the Foods Option, the Food Industry Option, or will select the second degree in Human Nutritional Sciences. The educational requirements to qualify for a dietetic internship and membership with the College of Dietitians of Manitoba (CDM) or dietetic colleges in other Canadian provinces may be met within the Nutrition Option with the recommended selection of courses. Students can apply for a dietetic internship during the program (see application requirements and procedures for Pre-Selection by the Manitoba Partnership Program), in the final year of their degree or after completion of their degree. Internships are awarded competitively by external institutions. Review

the section on academic requirements for eligibility to apply for a dietetic internship for students admitted in September, 2007 and later. Those who plan to enter Human Nutritional Sciences are advised that Applied Math or Pre-Calculus Mathematics 40S and Chemistry 40S are prerequisites to CHEM 1300 University 1: Structure and Modeling in Chemistry. A student admitted to the Human Nutritional Sciences program must take a minimum of one HNSC required course in the year they are admitted. Before entering continuing years in the Faculty of Human Ecology, the overall program must be planned with departmental advice. Sessions are held in March of each year.

Students admitted in September 2010 or later must register for at least one HNSC course (3 credit hours) in order to stay in the Human Nutritional Sciences program.

**Students Admitted in September 2012 or Later**

Course No.	Course Name	Credit Hours
Courses to be taken by all Human Nutritional Sciences students		
CHEM 1300	University 1: Structure and Modeling in Chemistry	3
CHEM 1320	University 1: Introduction to Organic Chemistry (See Note 1)	3
CHEM 2770	Elements of Biochemistry 1 (See Note 2)	3
CHEM 2780	Elements of Biochemistry 2 (See Note 3)	3



FOOD 4150	Food Microbiology	3
HMEC 2000	Research Methods and Presentation	3
HMEC 3000	Introduction to Social Epidemiology	3
HEAL 2600	Integration of Health Determinants of Individuals	3
HNSC 1200	Food: Facts and Fallacies	3
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
HNSC 2130	Nutrition through the Life Cycle	3
HNSC 2140	Basic Principles of Human Nutrition	3
HNSC 2150	Composition, Functional and Nutritional Properties of Foods	3
HNSC 2160	Food Preparation and Preservation	3
HNSC 3330	Ingredient Technology for Designed Foods	3
HNSC 4160	Seminar in Foods and Nutrition	3
HNSC 4290	Food, Nutrition and Health Policies	3
PSYC 1200 or SOC 1200	Introduction to Psychology or Introduction to Sociology or Combination of the two areas	6
STAT 1000	Basic Statistical Analysis 1	3
STAT 2000	Basic Statistical Analysis 2	3
BIOL 1410	Anatomy of the Human Body	3 - 6
	or	
BIOL 1020 and BIOL 1030	Biology 1 and 2 (If Biology 1 and 2 are taken, the additional 3 credit hours are considered to be free electives)	
BIOL 1412	Physiology of the Human Body (See Note 4)	3
<b>Nutrition Option</b>		
HNSC 3300	Vitamins and Minerals in Human Health	3
HNSC 3310	Macronutrients and Human Health	3
HNSC 3320	Nutrition Education and Dietary Change	3
HNSC 4320	Nutritional Management of Disease States	3
	Or	
HNSC 4300	Community Nutrition Intervention	
	Department Electives	15
	Free Electives	24
	Restricted Faculty Electives (see Note 5)	
<b>Foods Option</b>		
HNSC 3300	Vitamins and Minerals in Human Health	3
	or	
HNSC 3310	Macronutrients and Human Health	
HNSC 3260	Food Quality Evaluation	3
HNSC 3350	Culture and Food Patterns	3
HNSC 4270	Sensory Evaluation of Food	3
HNSC 4280	Food Product Development	3
MKTG 2210	Fundamentals of Marketing	3
	Program Electives (See Note 6)	9
	Free Electives	24
	Restricted Faculty Electives (see Note 5)	
<b>Food Industry Option</b>		
FOOD 4310	Introduction to HACCP	3
GMGT 1010 or GMGT 2030	Business and Society or Administrative Theory	3
HNSC 3260	Food Quality Evaluation	3
HNSC 3300 or HNSC 3310	Vitamins and Minerals in Human Health or Macronutrients and Human Health	3
HNSC 4280	Food Product Development	3
HNSC 4364	Foods Industry Option Practicum	6
MKT 2210	Fundamentals of Marketing	3
<b>NOTE:</b> HNSC 4290 is not a requirement for students in the Food Industry Option.		
Students in the Food Industry Option must complete one of the following concentrations (15 credit hours). Select 15 credit hours of course work from the list that follows.		
<b>Quality Assurance Concentration</b>		15
AGRI 2190	Toxicology Principles	1.5
ANSC 2530	Nutritional Toxicology	1.5
FOOD 4160	Food Analysis 1	3
FOOD 4250	Food Analysis 2	3
FOOD 4500	Food Safety and Regulations	3
FOOD 4250	Food Analysis 2	3
STAT 3000	Applied Linear Statistical Models	3
STAT 3170	Statistical Quality Control	3



<b>Food Product Development Concentration</b>		<b>15</b>
FOOD 4160	Food Analysis 1	3
FOOD 4250	Food Analysis 2	3
FOOD 4500	Food Safety and Regulations	3
One of	One of	3
FOOD 3160, FOOD 3170, FOOD 3200	Frozen Dairy Products, Cheese and Milk Products, or Baking Science	
HNSC 4270	Sensory Evaluation of Food	3
HNSC 4290	Food, Nutrition and Health Policies	3
HNSC 4540	Functional Foods and Nutraceuticals	3
STAT 3000	Applied Linear Statistical Models	3
<b>Food Industry Management Concentration</b>		<b>15</b>
ACC 1100	Introductory Financial Accounting	3
GMGT 2060	Management and Organization Theory	3
GMGT 3010	Management Decision-Making	3
HRIR 2440	Human Resource Management	3
MKT 3220	Marketing Research	3
HNSC 3342	Management for Food and Nutritional Professionals	3
GMGT 3XXX	3000 level	3
Electives (see Advising Information for suggested electives)		15

#### 4.8.1 Pre-Professional Preparation

Students in the Human Nutritional Sciences program can complete the entrance requirements for several professional programs as part of the degree.

#### A. Dietetics Focus: Academic requirements for eligibility to enter a dietetic internship.

1. Courses required in addition to the Human Nutritional Sciences program:

Course No.	Course Name	Credit Hours	Placement in Program
GMGT 1010 or GMGT 2030	Business and Society or Administrative Theory	3	Free Elective
HNSC 3342	Management for Food and Nutrition Professionals	3	Department Elective
HNSC 4140	Quantity Food Production and Management	3	Department Elective
HNSC 4XXX	One of HNSC 4300, HNSC 4310, HNSC 4362, or HNSC 4340	3-6	Department Elective

2. Entry into a Dietetic internship is competitive. It is strongly recommended that students seek advice from the Department on all aspects of preparing an application to an internship.

#### i. Students admitted prior to September 2007:

Students admitted prior to September, 2007 will follow regulations regarding Dietetic internship applications in the final year of their degrees (information available on the Human Ecology web site and from the Dean's Office).

#### ii. Students admitted for September 2007 or later:

Students admitted to the Faculty of Human Ecology's Department of Human Nutritional Sciences in September, 2007 or later, will be eligible to apply to be pre-selected by the Manitoba Partnership Dietetic Education Program (MPP) after completion of 60 – 90 credit hours. Details of the pre-selection process and the academic rating selection criteria will be published by the MPP and a link is available on the Faculty of Human Ecology's web site. If students are not pre-selected by the MPP, there are other opportunities to apply in the final year of degree for internships following degree completion.

3. For those intending to apply for a Dietetic internship, the second degree's Dietetics Preparation program meets the course requirements in Human Nutritional Sciences, but not all the other supporting course requirements, for example, psychology/sociology, humanities or social sciences, microbiology, research methods, communication arts, basic principles of management. Check with an Academic Advisor to review the supporting course requirements from previous academic work.



**B. Medicine or Dentistry: Eligibility for entry into the program Doctor of Medicine, or the program Doctor of Dental Medicine, at the University of Manitoba.**

Courses required in addition to the Human Nutritional Sciences program (can be taken as electives in the program):

Course No.	Course Name	Credit Hours	Placement in Program
CHEM 2210*	Introduction to Organic Chemistry 1: Structure and Function 3 (see Note 7)	3	Free Elective
CHEM 2220	Introduction to Organic Chemistry 2: Reactivity and Synthesis (See Note 7)	3	Free Elective
CHEM 2360** or MBIO 2360	Biochemistry 1: Bio-molecules and an Introduction to Metabolic Energy	3	Free Elective
CHEM 2370** or MBIO 2370	Biochemistry 2: Catabolism, Synthesis and Information Pathways	3	Free Elective
	Humanities requirement (Check the Faculty of Medicine's application information regarding the Humanities/ Social Science requirement).		Free Elective
PHYS 1020	General Physics 1	3	Free Elective
PHYS 1030	General Physics 2	3	Free Elective

\* Cannot be held with CHEM 1320 in the same program. Prerequisite is CHEM 1310 (University 1: Introduction to Physical Chemistry).

\*\* These courses replace the biochemistry courses in the Human Nutritional Sciences program.

**C. Law: Eligibility for entry into the program Bachelor of Laws at the University of Manitoba.**

1. The Human Nutritional Sciences program meets the entrance requirements of the Faculty of Law.

**NOTES:**

- Under required courses, students can take either CHEM 1320 (University 1: Introduction to Organic Chemistry) or CHEM 1310 (University 1: Introduction to Physical Chemistry).
- Under required courses, students can take either CHEM/MBIO 2770 (Elements of Biochemistry 1) or CHEM/MBIO 2360 (Biochemistry 1: Bio-molecules and an Introduction to Metabolic Energy).
- Under required courses, students can take either CHEM/MBIO 2780 (Elements of Biochemistry 2) or CHEM/MBIO 2370 (Biochemistry 2: Catabolism, Synthesis, and Information Pathways).
- Under required courses, students can take either BIOL 1412 (Physiology of the Human Body) or BIOL 2410 (Human Physiology 1) and BIOL 2420 (Human Physiology 2). Note that students selecting BIOL 1020 and 1030 are not required to complete BIOL 1410, and will decrease electives to 12 credit hours. The selection of BIOL 1020 and 1030 will have more options with regard to taking higher level Botany, Zoology and Microbiology courses as electives.
- Nine credit hours of courses from either the Asper School of Business and/or from 3<sup>rd</sup> and 4<sup>th</sup> year courses in the Department of Food Science.
- For students who do not take CHEM 2210 and CHEM 2220, CHEM 1320 is preferred.

**4.9 Minor in Human Nutrition and Metabolism Content**

The Minor in Human Nutrition and Metabolism (18 credit hours) requires the following courses:

Course No.	Course Name	Credit Hours
HNSC 1200	Food: Facts and Fallacies	3
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
HNSC 2140	Basic Principles of Human Nutrition	3
HNSC 3300	Vitamins and Minerals in Human Health	3
HNSC 3310	Macronutrients and Human Health	3
HNSC 4120 or	Senior Thesis	3
HNSC 4540	Functional Foods and Nutraceuticals	



**4.10 Second Degree Program in Human Nutritional Sciences Content  
Required Courses -- 45 Credit Hours**

Refer to information in section 4.8.1 about applying for a Dietetic internship. Students must complete 60 credit hours while enrolled in the second degree program. If any of the required courses have been completed in the previous degree, free electives must be chosen to meet the 60 credit hour requirement. Students are not required to satisfy the Written English requirement.

Course No.	Course Name	Credit Hours
CHEM 1300	University 1: Structure and Modeling in Chemistry (see note 1)	3
CHEM 1320	University 1: Introduction to Organic Chemistry (see note 1)	3
CHEM 2770	Elements of Biochemistry 1 (see note 2)	3
CHEM 2780	Elements of Biochemistry 2 (see note 3)	3
HNSC 2140	Basic Principles of Human Nutrition	3
HNSC 2160	Principles of Food Preparation and Preservation	3
HNSC 3300	Vitamins and Minerals in Human Health	3
HNSC 3310	Macronutrients and Human Health	3
HNSC 3320	Nutrition Education and Dietary Change	3
HNSC 3330	Ingredient Technology for Designed Foods	3
HNSC 4290	Food, Nutrition and Health Policies	3
STAT 1000	Basic Statistical Analysis 1	3
STAT 2000	Basic Statistical Analysis 2	3
BIOL 1410 or BIOL 1020 and BIOL 1030	Anatomy of the Human Body or Biology 1 and Biology 2 (see note 4)	3-6
BIOL 1412	Physiology of the Human Body (see note 5)	3

**Free Elective Courses - 6 credit hours.** If additional courses are required as prerequisites, they will be considered free electives.

**Elective Courses – 9 credit hours from Human Nutritional Sciences** (choose one of three options):

Course No.	Course Name	Credit Hours
<b>A. Dietetics Preparation</b>		
HNSC 3342	Management for Food and Nutrition Professionals	3
HNSC 4140	Quantity Food Production and Management	3
HNSC 4320	Nutrition Management of Disease States	3
<b>B. Human Nutrition</b>		
HNSC 4320	Nutrition Management of Disease States	3
or		
HNSC 4300	Community Nutrition Intervention	6
Choose 6 credit hours from:		
HNSC 4300, HNSC 4310, HNSC 4340 or HNSC 4350	Community Nutrition Intervention, Nutrition and the Elderly, Maternal and Child Nutrition, or Nutrition in Exercise and Sport	
<b>C. Foods</b>		
HNSC 2150	Composition, Functional and Nutritional Properties of Foods	3
HNSC 3260	Food Quality Evaluation	3
HNSC 4540	Functional Foods and Nutraceuticals	3

**NOTES:**

- Under required courses, students can take either CHEM 1320 (University 1: An Introduction to Organic Chemistry), or CHEM 1310 (University 1: An Introduction to Physical Chemistry). Students can take CHEM 2210 (Introduction to Organic Chemistry 1: Structure and Function) and CHEM 2220 (Introduction to Organic Chemistry 2: Reactivity and Synthesis) instead of CHEM 1300 and CHEM 1310 or CHEM 1320. For students who do not take CHEM 2210 and CHEM 2220, CHEM 1320 is preferred.
- Under required courses, students can take either CHEM/MBIO 2770 (Elements of Biochemistry1) or CHEM/MBIO 2360 (Biochemistry 1: Bio-molecules and in Introduction to Metabolic Energy).
- Under required courses, students can take either CHEM/MBIO 2780 (Elements of Biochemistry 2) or CHEM/ MBIO 2370 (Biochemistry 2: Catabolism, Synthesis, and Information Pathways).



4. Under required courses, students can take either BIOL 1412 (Physiology of the Human Body) or BIOL 2410 (Human Physiology 1) and BIOL 2412 (Human Physiology 2). Note that students selecting BIOL 1020 and 1030 are not required to complete BIOL 1410, and will decrease electives to 12 credit hours. The selection of BIOL 1020 and 1030 will have more options with regard to taking higher level Botany, Zoology and Microbiology courses as electives.
5. If BIOL 1020 and BIOL 1030 are taken, the additional 3 credit hours are considered to be free electives.

#### 4.11 Interdisciplinary Health Program Content Program Chairperson: Shahin Shoostari

This curriculum consists of two degree programs: the Bachelor in Health Sciences and the Bachelor in Health Studies. These degree programs offer new approaches to planning, administration and delivery of health services by fully integrating biological science and social science in understanding the health of people. Students will gain experience of dealing with health issues at the individual, community and institutional levels, as well as across the

lifespan. The two degrees can serve as the foundation for careers in health care teams and community health management. They offer a general course of study, not a professional status. Students can use both degree programs to build the knowledge and prerequisites for entry into professional programs in the health and social science fields, such as medicine, dentistry and others. The Bachelor of Health Sciences degree provides students with an interdisciplinary background and skill set that will contribute to their preparation for a future in biomedical and health-related careers. This interdisciplinary skill set is seen as advantageous for future physicians and students applying for professional education.

##### 4.11.1 Health Sciences Degree Students Admitted in September 2012 or Later

Course No.	Course Name	Credit Hours
The following 30 credit hours are to be taken in U1		
BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interaction	3
CHEM 1300	University 1: Structure and Modeling in Chemistry	3
CHEM 1310	University 1: Introduction to Physical Chemistry	3
PSYC 1200	Introduction to Psychology	6
STAT 1000	Basic Statistical Analysis 1	3
BIOL 1410	Anatomy of the Human Body	3
BIOL 1412	Physiology of the Human Body	3
<b>Required courses</b>		
FMLY 3780 or FMLY 3790	Introduction to the Development of Programs for Children and Families or Introduction to the Evaluation of Programs for Children and Families	3
ECON 1210	Introduction to Canadian Economic Issues and Policies	3
GMGT 1010 or GMGT 2030	Business and Society or Administrative Theory	3
HEAL 2600	Integration of Health Determinants of Individuals	3
HEAL 3600	Integration of Health Determinants for Communities	3
HEAL 4600	Integration of Health Determinants for Canada and the World	3
HEAL 4620	Health Sciences Capstone	3
NATV 1220 or NATV 1240	The Native Peoples of Canada, Part 1 or The Native Peoples of Canada, Part 2	3
HMEC 3000	Introduction to Social Epidemiology	3
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
PHIL 1290	Critical Thinking	3
PSYC 2250 or HMEC 2000	Introduction to Psychological Research or Research Methods and Presentation	3
<b>Select 6 out of 9 credit hours</b>		
GEOG 4290	Geographies of Health and Health Care	
PHIL 2740	Ethics and Biomedicine	
SOC 2490	Sociology of Health and Illness	
<b>Elective Courses</b>	To be taken from an approved list of Science courses (available on the Human Ecology web site and from the Dean's Office). At least 24 credit hours are to be taken at the 3000 and 4000 level. A minimum of 21 of the 36 hours must be from the Sciences.	36
Free Electives		15



**4.11.2 Health Studies Degree**  
**Students Admitted in September 2012 or Later**

Course No.	Course Name	Credit Hours
The following 30 credit hours are to be taken in U1		
ANTH 1210	Human Origins and Antiquity	3
ANTH 1220	Cultural Anthropology	3
BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interaction	3
PSYC 1200	Introduction to Psychology	6
SOC 1200	Introduction to Sociology	6
STAT 1000	Basic Statistical Analysis 1	3
<b>Required courses</b>		
FMLY 3780 or FMLY 3790	Introduction to the Development of Programs for Children and Families or Introduction to the Evaluation of Programs for Children and Families	3
ECON 1210	Introduction to Canadian Economic Issues and Policies	3
GMGT 1010 or GMGT 2030	Business and Society or Administrative Theory	3
HEAL 2600	Integration of Health Determinants of Individuals	3
HEAL 3600	Integration of Health Determinants for Communities	3
HEAL 4600	Integration of Health Determinants for Canada and the World	3
HEAL 4610	Health Studies Capstone	3
NATV 1220 or NATV 1240	The Native Peoples of Canada, Part I or the Native Peoples of Canada, Part 2	3
HMEC 3000	Introduction to Social Epidemiology	3
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
PHIL 1290	Critical Thinking	3
PSYC 2250 or HMEC 2000	Introduction to Psychological Research or Research Methods and Presentation	3
<b>Select 6 out of 9 credit hours</b>		6
GEOG 4290	Geographies of Health and Health Care	
PHIL 2740	Ethics and Biomedicine	
SOC 2490	Sociology of Health and Illness	
<b>Elective Courses</b>	To be taken from an approved list of Social Science courses (available on the Human Ecology web site and from the Dean's Office). At least 24 credit hours are to be taken at the 3000 and 4000 level. A minimum of 21 of the 36 credit hours must be from the Social Sciences.	36
Free Electives		15

**Notes:**

1. Before entering continuing years in the Faculty of Human Ecology, the overall program must be planned with academic advice. Sessions are held in March of each year.
2. Students are strongly encouraged to seek the advice of Academic Advisors in the Faculty of Human Ecology in order to plan their programs to develop pathways of knowledge that will assist them in moving toward careers in chosen fields. Advice is available in the Dean's Office and on the Human Ecology web site.
3. Students in both programs are required to structure their course selections as follows:  
In Health Sciences, students are required to take 21 credit hours of science and 12 credit hours of social science courses from 36 credit hours of Approved Electives.  
In Health Studies, students are required to take 21 credit hours of social science and 12 credit hours of science courses from 36 credit hours of Approved Electives.
4. Students in both programs are required to take at least 24 credit hours at the 3000 and 4000 levels from 36 credit hours of Approved Electives.  
Students should consult the University Calendar to ensure that they have the appropriate pre- or corequisites before they attempt to register in a course. A number of courses are cross-listed between departments/faculties. The Academic Advisor will give additional guidance.

**4.11.3 Health Sciences and Health Studies Minors**

Minors in Health Sciences and Health Studies are offered by the Interdisciplinary Health Degree program.

**Health Sciences Minor:**



HEAL 2600	Integration of Health Determinants of Individuals
HEAL 3600	Integration of Health Determinants for Communities
HEAL 4600	Integration of Health Determinants for Canada and the World
	6 credit hours of Science Orientation courses at the 3000 or 4000 level*
	3 credit hours of Social Science Orientation courses at the 3000 or 4000 level*
TOTAL	18 credit hours

**Health Studies Minor:**

HEAL 2600	Integration of Health Determinants of Individuals
HEAL 3600	Integration of Health Determinants for Communities
HEAL 4600	Integration of Health Determinants for Canada and the World
	6 credit hours of Social Science Orientation courses at the 3000 or 4000 level*
	3 credit hours of Science Orientation courses at the 3000 or 4000 level*
TOTAL	18 credit hours

\*Courses from the approved program electives list for the Interdisciplinary Health Degree Program are listed online at: [http://umanitoba.ca/faculties/human\\_ecology/programs/idh/bhsciences/429.html](http://umanitoba.ca/faculties/human_ecology/programs/idh/bhsciences/429.html).

**4.12 Textile Sciences Content**

**Head:**

The Textile Sciences undergraduate program imparts knowledge and skills which meet the demands of work and research environments driven by scientific, technological, and logistical innovations in textiles. It comprises two streams – product development and textile development. The product development stream is structured to help students develop problem solving abilities systematically through the application and integration of knowledge in textile science, human and organizational behaviour, environmental forces, and methods of quantifying and interpreting observations. The textile development stream is a response to the emerging significance of textiles in health and health promotion. Within the textile development stream,

three options will be offered – Exercise and Sports Science, Engineering Sciences, and Microbiological Sciences. These options capitalize on the strengths of other academic disciplines within the University of Manitoba which are relevant to the study of textiles for health and health promotion. Students who choose the textile development stream must have Pre-Calculus or Applied Mathematics 40S and Chemistry 40S to take CHEM 1310. Students who consider subscribing to the Engineering Sciences Option must have Pre-Calculus or Applied Mathematics 40S, Physics 40S, and Chemistry 40S. Students must choose either the Textile Development or Product Development choice upon first registration in the Faculty.

In March of each year program planning sessions are provided to assist students in their selection of courses for subsequent years of study.

**Students Admitted in September 2012 or Later**

**4.12.1 Product Development Stream**

Course No.	Credit Hours	
CHEM 1000	Understanding the World through Chemistry	3
or		
CHEM 1300	University 1: Structure and Modelling in Chemistry	



ECON 1210	Introduction to Canadian Economic Issues and Policies	3
ECON 1220	Introduction to Global and Environmental Economic Issues and Policies	3
FMLY 1010	Human Development in the Family	3
HEAL 2600	Integration of Health Determinants of Individuals	3
HMEC 2000	Research Methods and Presentation	3
HMEC 3000	Introduction to Social Epidemiology	3
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
PERS 1200	Physical Activity, Health and Wellness	3
PSYC 1200	Introduction to Psychology	6
or		
SOC 1200	Introduction to Sociology	
STAT 1000	Basic Statistical Analysis 1	3
TXSC 1600	Textiles for Living	3
TXSC 1610	Textiles, Products, and Consumers	3
TXSC 2500	Preparation for Product Development	1
TXSC 2600	Textiles for Apparel End Uses	3
TXSC 2610	Textiles for Non Apparel End Uses	3
TXSC 2620	Consumer and Organizational Behaviour toward Textile Products	3
TXSC 2630	Pattern Development in an Industrial Environment	3
TXSC 3600	Global Apparel and Textiles Trade	3
TXSC 3610	Product Standards and Specifications	3
TXSC 3620	Evaluation of Textile Performance	3
TXSC 3630	Line Planning and Visual Communication	3
TXSC 3640	Pattern Development in a Computer Aided Design Environment	3
TXSC 3650	Production of Textile Products	3
TXSC 4610	Integrative Project	6
TXSC 4620	Colour Management	3
TXSC 4630	Quality Assurance Systems	3
	Department Electives	9
	Free Electives	27

#### 4.12.2 Textile Development Stream

Course No.	Credit Hours	
CHEM 1300	University 1: Structure and Modelling in Chemistry	3
CHEM 1310	University 1: An Introduction to Physical Chemistry	3
CHEM 2210	Introductory Organic Chemistry 1: Structure and Function	3
CHEM 2220	Introductory Organic Chemistry 2: Reactivity and Synthesis	3
FMLY 1010	Human Development in the Family	3
HEAL 2600	Integration of Health Determinants of Individuals	3
HMEC 2000	Research Methods and Presentation	3
HMEC 3000	Introduction to Social Epidemiology	3
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
PERS 1200	Physical Activity, Health and Wellness	3
PSYC 1200	Introduction to Psychology	6
or		
SOC 1200	Introduction to Sociology	
STAT 1000	Basic Statistical Analysis 1	3
STAT 2000	Basic Statistical Analysis 2	3
TXSC 1600	Textiles for Living	3
TXSC 1610	Textiles, Products, and Consumers	3
TXSC 2600	Textiles for Apparel End Uses	3
TXSC 2610	Textiles for Non Apparel End Uses	3
TXSC 2620	Consumer and Organizational Behaviour toward Textile Products	3
TXSC 3500	Textiles for the Healthcare Sector	3
TXSC 3610	Product Standards and Specifications	3
TXSC 3620	Evaluation of Textile Performance	3
TXSC 4500	Advanced Textiles for the Healthcare Sector	3
TXSC 4610	Integrative Project	6
TXSC 4620	Colour Management	3
TXSC 4630	Quality Assurance Systems	3

#### Engineering Sciences Option



ENG 1430	Design in Engineering	4
or		
ENG 1440	Introduction to Statics	4
	Choose 24 credit hours from the following list of Engineering courses:	24
BIOE 2580	Biosystems Engineering Design Trilogy 1	4
BIOE 3590	Mechanics of Materials in Biosystems	4
CIVL 2800	Solid Mechanics	4
ENG 1430	Design in Engineering	4
ENG 1440	Introduction to Statics	4
MECH 2270	Principles of Engineering Materials	4
MECH 2290	Manufacturing Engineering	3
MECH 2300	Introduction to Production and Manufacturing	3
MECH 3540	Modern Engineering Materials	4
	Department Electives	3
	Free electives	12

#### Microbiological Sciences Option

BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interaction	3
MBIO 1000	Microbiology 1	3
MBIO 2360	Biochemistry 1: Biomolecules and an Introduction to Metabolic Energy	3
MBIO 2370	Biochemistry 2: Catabolism, Synthesis, and Information Pathways	3
MBIO 3010	Mechanism of Microbial Disease	3
	Department Electives	3
	Free electives	15

#### Exercise and Sports Science Option

BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, Function	3
	and Interaction	
KIN 2320	Human Anatomy	3
KIN 2330	Biomechanics	3
KIN 3470	Exercise Physiology	3
BIOL 1412	Physiology of the Human Body	3
	Textile Sciences Department Electives	3
	Free electives	18

#### 4.13 Textile Sciences Minor Content

A minor in Textile Sciences is offered by the Department of Textile Sciences. Students must complete 18 credit hours, distributed as follows: A maximum of six (6) credit hours in Textile Sciences at the 1000 level, and at least three (3) credit hours in Textile Sciences at the 2000 level, and at least three (3) credit hours in Textile Sciences at the 3000 or 4000 level, with no more than 6 credit hours at the 1000 level.

Students must check with their home Faculties to see if the Textile Sciences minor is available in their programs.

#### 4.14 Interfaculty Option in Aging Content

An Option in Aging is offered by and in the following faculties: Arts, Human Ecology, Nursing, Kinesiology and Recreation Management and Social Work.

To complete the option, students in Human Ecology must complete each of the following requirements:

- HMEC 2650 or REC 2650 or SWRK 2650, The Social Aspects of Aging;
- 
- NURS 2610 or KIN 2610, Health and Physical Aspects of Aging;
- At least three credit hours of professional/discipline specific applied work on aging within the student's department of registration (a list of courses is available in the general office); and,
- An additional nine credit hours of aging-related courses from the participating units; a list is available in the General Office. Upon completion of these requirements, a "comment" will be added to the student's transcript.

Further information is available from the General Office of Human Ecology.



#### 4.15 The Minor in Management Content

A Management Minor is offered by the Asper School of Business. Human Ecology students may complete this Minor as part of the electives portion of their programs. The Minor will consist of any 18 credit hours of Management courses. Students must meet prerequisites for all courses. Further information is available from the Human Ecology General Office.

#### 4.16 The Voluntary Minor Content

Students in the Faculty of Human Ecology may declare and complete a Minor from departments and interdisciplinary programs in which a Minor is offered. The Family Social Sciences Minor and the Minor in Human Nutrition and Metabolism are available through the Faculty of Human Ecology. Information about Minors in programs other than Human Ecology is found in the appropriate description of departmental/school/faculty program offerings in the Undergraduate Calendar.

Completion of the Minor is entirely optional. Students may not, however, declare both their Major and Minor from the same department/interdisciplinary program. No course may be used as part of a prescribed program in the Faculty of Human Ecology and also be part of a prescribed Minor. For example, if a course in Chemistry is part of a student's degree requirements in the Faculty of Human Ecology, it cannot be used as part of a Minor in another program. Completion of a Minor may require that a student take more than the minimum number of credit hours for graduation.

### SECTION 5: Family Social Sciences -1000

#### Level

**FMLY 1010** Human Development in the Family Cr.Hrs.3 (Formerly 062.101) Introductory survey of key aspects of human development processes within the family context from a life span perspective. Not to be held with NURS 1260 (049.126).

**FMLY 1012** Introduction to Social Development Cr.Hrs.3 This course is an introduction to Social Development with a particular emphasis on families and communities. Social development is concerned with the advancement of the common good, the effective management of social problems, the meeting of human needs, and the equitable distribution of society's resources. As such, this course explores the social factors and conditions that promote or hinder social development and how this affects the well-being of individual, families, and communities in contemporary societies. Not to be held with 062.172 or FMLY 1900

**FMLY 1020** Family Issues across the Lifespan Cr.Hrs.3 (Formerly 062.102) Introduction to contemporary issues involving families across the lifespan. Topics include mate selection, marriage, parenthood, divorce, lone-parent families, work-family balance, family violence, families and older persons, and poverty in families. Not to be held with 062.114.

**FMLY 1420** Family Management Principles Cr.Hrs.3 (Formerly 062.142) An introductory course that uses an ecosystem perspective resources, decision-making, planning, implementing, evaluating, and communication within family contexts. Applications to balancing work and family, individual and family stress, family finance, environmental issues, and the use of time and human resources will be made. Not to be held with the former 062.142.

**FMLY 1900** Families, Housing and Community: An Introductory Perspective Cr.Hrs.3 (Formerly 062.190) An introduction to understanding housing and community for individuals and families; shelter outside mainstream; neighbourhoods and communities; links between well being and poverty, housing, and community; some policy and program issues; various approaches used in studying this topic. Opportunity for some field experience. Not to be held with 062.172.

### SECTION 5: Family Social Sciences -2000

#### Level

**FMLY 2012** Development, Conflict, and Displacement Cr.Hrs.3

The course is an introduction to development, conflict, and displacement as they affect individuals, families and communities. Specifically, this course examines the current phenomenon of induced displacement due to social conflicts, natural disasters, or uneven development in developing countries. Students will examine concepts and issues arising from induced displacement and explore community based responses to this problem. Not to be held with FMLY 2900. Prerequisite: 1012 or consent of the instructor.

**FMLY 2350** Multicultural Family Issues Cr.Hrs.3 (Formerly 062.235) A focus on multicultural issues that affect family interaction in Canada, which is designed to prepare students for professional practice. Emphasizes dominant/minority family relationships, internal family dynamics of minority families, social policies directed toward creating and maintaining multiculturalism and diversity education for future professionals. Manitoba Aboriginal family life is accentuated. Prerequisite: FMLY 1020 (062.102) or equivalent.

**FMLY 2400** Family Financial Health Cr.Hrs.3 A survey of topics that have an impact on the financial health of Canadian families, including personal money management, mortgage financing, credit and debt, educational and retirement planning, taxation, insurance, savings and investments. The course prepares students to help families maximize resources and increase their financial literacy. Prerequisite: FMLY 1420 (051.142). Not to be held with the former FMLY 2070 (062.207).

**FMLY 2600** Foundations of Childhood Developmental Health Cr.Hrs.3 (Formerly 062.260) This course examines implications of theory and research in child development for promoting developmental health. Laboratory component focuses on working with children and evaluating effects of developmental progress. Prerequisite: Minimum grade of C in FMLY 1010 (062.101). Limited enrolment.



**FMLY 2800** Family Violence Cr.Hrs.3  
(Formerly 062.280) A survey of the extent and nature of various forms of family violence across the life course. Topics include physical and sexual child abuse, sibling violence, partner violence, and elder abuse. Emphasis is on prevalence, incidence, causes, consequences and solutions. Prerequisite: FMLY 1010 (062.101) or FMLY 1020 (062.102) or PSYC 1200 (017.120) or SOC 1200 (077.120).

**FMLY 2900** Families, Housing and Community: A Development Perspective Cr.Hrs.3  
(Formerly 062.290) Focus is on developmental issues for individuals, families and communities. Of particular interest is the interrelationship between facilitating community development and the developmental well being of residents. Social, psychological, cultural and political components are considered. Prerequisite: FMLY 1900 (062.190 or 062.172) or consent of instructor.

## SECTION 5: Family Social Sciences -3000

### Level

**FMLY 3012** Theories of Social Development Cr.Hrs.3  
This course is a survey of social development theories that have influence the study and practice of development since the 1950s. It addresses the question of why theories of social development are necessary and why different theories emerged at particular times in history. This course examines explanations of development and underdevelopment as they impact on individuals, families and communities. Not be held with FMLY 4900. Prerequisite: FMLY 1012.

**FMLY 3220** Death and the Family Cr.Hrs.3  
(Formerly 062.322) An examination of dying and death of family members throughout the family life cycle. Specific topics included are the meaning of death, the process of dying, caring relationships, grief and bereavement. Prerequisite: FMLY 1020 (062.102) or PSYC 1200 (017.120) or SOC 1200 (077.120).

**FMLY 3240** Families in Later Years Cr.Hrs.3  
(Formerly 062.324) An investigation of family issues in the later years of life, such as housing, intergenerational relations, adjustment to retirement, sibling relations, grandparenting, death. Students may not hold credit for FMLY 3240 (062.324) and the former 062.321. Prerequisites: [FMLY 1010 (062.101) and FMLY 1020 (062.102)] or PSYC 1200 (017.120) or SOC 1200 (077.120).

**FMLY 3330** Parenting and Developmental Health Cr.Hrs.3  
Examines parenting and its influence on developmental health, with consideration of change across time, the context in which parenting occurs, and the effect of the parent-child relationship on developmental health. Prerequisites: FMLY 2600 or FMLY 3600. Not to be held with 062.435.

**FMLY 3400** Families as Consumers Cr.Hrs.3  
An examination of the factors that influence the consumer behaviour of individuals and families across the life course, with particular attention to the situation of vulnerable consumers. Theory, education, policy and practice are related to contemporary consumer issues and the impact of consumption behaviour on the environment. Prerequisites: FMLY2400 or FMLY 2070 (062.207) and ECON 1200 (018.120) or ECON 1210 (018.121) or ECON 1220 (018.122). Not to be held with the former FMLY 3450

(062.345).

**FMLY 3470** Selected Studies in the Family I Cr.Hrs.3  
(Formerly 062.347) The opportunity to carry out an individual study in the area of the family of particular interest to the student. When enrolment warrants, the department may offer selected topics in a regular course format. Prerequisite: consent of instructor.

**FMLY 3600** Adolescents in Families and Society Cr.Hrs.3  
(Formerly 062.360) This course is designed to help students understand the nature of adolescent relationships with their families in communities. The application of theory and research on adolescent relationships to professional practice with families and communities is emphasized. Prerequisite: FMLY 2600 (062.260) and completion of 54 credit hours.

**FMLY 3610** Developmental Health of Children and Youth Cr.Hrs.3  
(Formerly 062.361) Population health gradients are largely set early in life and are affected by the environments in which children live. This course examines current knowledge of the social determinants of child and adolescent health. Consideration is given to policy implications, including directions for program development and evaluation. Not to be held with the former 062.450. Prerequisite: FMLY 2600 (062.260). Not to be held with 062.450.

**FMLY 3780** Introduction to the Development of Programs for Children and Families Cr.Hrs.3  
(Formerly 062.378) An introduction to the theory and practice of program development with special emphasis on programs for children and families. The course will cover techniques for conducting need assessments, as well as the process of planning and implementing programs to address community need. Prerequisite: HMEC 2000 or HMEC 2050 (028.205).

**FMLY 3790** Introduction to the Evaluation of Programs for Children and Families Cr.Hrs.3  
(Formerly 062.379) An introduction to the theory and practice of program evaluation with special emphasis on child and family programs. Considers the purpose of evaluation, types of evaluation, evaluation design and analysis, and the evaluation process. Prerequisite: HMEC 2050 (028.205).

**FMLY 3800** Conflict Resolution in the Family Cr.Hrs.3  
(Formerly 062.380) Students will examine the nature and development of conflict in family relationships throughout the life span. Implications of conflict for the quality of family relationships and individual development will be addressed. Prerequisite: FMLY 2800 (062.280) and completion of 54 credit hours.

**FMLY 3802** Intimate Partner Violence Cr.Hrs.3  
A critical examination of theory and research on violence in intimate relationships. Topics will include violence in dating, common-law, marital, ex-partner and same-sex relationships. Prerequisite: FMLY 2800.

**FMLY 3806** Children, Violence and Rights Cr.Hrs.3  
Violence against children in their families takes many forms, from sexual exploitation to honour killings. We will explore, through a child rights lens, the forces contributing to violence against children, its impact on human lives, and approaches to prevention being implemented around the world.



Prerequisite: FMLY 2800. Not to be held with FMLY 3804.

**FMLY 3900** Families, Housing and Community: A Policy Perspective Cr.Hrs.3  
(Formerly 062.390) Examines policy relative to families, housing and community. Primer on public policy process and links to families. Examines housing policies at federal, provincial, and municipal levels and their impact on individuals and families. Opportunity for some field experience. Prerequisite: FMLY 1900 (062.190) or consent of instructor. Not to be held with 062.473.

## SECTION 5: Family Social Sciences -4000

### Level

**FMLY 4012** Social Development Policies Cr.Hrs.3  
This course examines the formulation of social development policies and the impact of these policies on the well-being of individuals, families, and communities. The course uses a seminar format to foster students' capacity to understand and examine policy issues. Students will develop skills in understanding, analyzing, and formulation social development policies. Actual social development case studies will be evaluated and alternative family and community oriented policies discussed. Not to be held with FMLY 3900. Prerequisite: 3012.

**FMLY 4220** Aging and Risk in a Global Context Cr.Hrs.3  
This course will take an interdisciplinary perspective on definitions of risk associated with a variety of determinants that shape the daily lived experience of older adults, their families and communities, and the institutions that care for them. Students will evaluate programs, policies and research, and engage in a final project of their choice. Prerequisite or Corequisite: HMEC 2650 or SWRK 2650 or REC 2650 or NURS 2610 or KIN 2610.

**FMLY 4300** Field Experience Cr.Hrs.6  
(Formerly 062.430) Provide students with field experience in a supervised setting. The course consists of 120 hours of supervised work in an assigned setting and seminar time with peers and field experience coordinator. Grade is pass/fail. Prerequisite: 84 credit hours and consent of instructor. Not to be held with 062.436 or 062.455 or 062.456 or 062.457.

**FMLY 4330** Management of Family Stress Cr.Hrs.3  
(Formerly 062.433) Theories which influence family behaviour during stress are discussed, and coping/managerial skills to mitigate the effects of the stressors are examined. Stress management advice from agencies and in educational settings is analyzed. Prerequisite: FMLY 1020 (062.102)

**FMLY 4400** Family Economics: Poverty and Wealth Cr.Hrs.3  
Analysis of principles, major problems and trends in the economic welfare of individuals and families in both the Canadian and global economies. Emphasis on families and their relationships to the economy such as income inequality, family economic policy, human capital, poverty and resource distribution within families. Prerequisites: [FMLY 2400 or FMLY 2070 (or 062.207)] and [one of ECON 1200 (04 018.120) or ECON 1210 (or 018.121) or ECON 1220 (or 018.122)]. Not to be held with the former FAMILY 4450 (or

062.445).

**FMLY 4460** Family Financial Counselling Cr.Hrs.3  
(Formerly 062.446) Theory and practice of financial counselling of debt-burdened families. Debt analysis. Appraisal of alternate solutions and of legal and psychosocial factors in terms of family well-being and financial capacity. Prerequisite: FMLY 3450 (062.345).

**FMLY 4470** Selected Studies in the Family II Cr.Hrs.3  
(Formerly 062.447) The opportunity to carry out advanced study in the area of the family of particular interest to the student. When enrolment warrants, the department may offer selected topics in a regular course format. Prerequisite: consent of instructor.

**FMLY 4480** Work and Family Issues Cr.Hrs.3  
(Formerly 062.448) An exploration of the interface between paid work and unpaid work and families in the Canadian and international contexts. Topics include demographic trends; parenting, child and elder care; management of work-family conflict; development of workplace solutions; and social policy implications. Prerequisite: FMLY 2400 or FMLY 2070 or 062.207 and 84 credit hours.

**FMLY 4500** Senior Thesis Cr.Hrs.6  
The preparation and presentation of a comprehensive review of the literature and an empirical investigation of an approved topic. Prerequisite: Registered in the final year of the Family Social Sciences program and consent of Department Head. Application required. Enrolment limited.

**FMLY 4600** Risk and Resilience in Behavioural and Social Development Cr.Hrs.3  
(Formerly 062.460) The development of behavioural and social difficulties are examined from a risk and resilience perspective. The interaction of factors at all levels of the human ecological system are considered in terms of their impact on increasing risk and/or building resilience in children and youth. Prerequisite: FMLY 2600 (062.260). Not to be held with 062.437.

**FMLY 4602** Family Relationships, Health and Well-being Cr.Hrs.3  
This course provides an indepth survey of the interaction between family relationship dynamics, health and well-being across the life course period. The influence of family members on health-related behaviours is reviewed and preventive family-based interventions are evaluated. Prerequisite: FMLY 3600 (or 062.360).

**FMLY 4604** Children in Adversity Cr.Hrs.3  
Millions of children live with violence, trauma and other adverse circumstances. We will explore the interactions among individual, family, cultural, legal and policy factors as they affect children's developmental pathways in the face of adversity. Prerequisite: FMLY 2600 or FMLY 3600. May not be held with FMLY 4600 or 62.437.

**FMLY 4800** Senior Seminar in Family Violence and Conflict Resolution Cr.Hrs.3  
(Formerly 062.480) Advanced study in the areas of family violence and/or conflict resolution. Special emphasis is placed upon current research and/or practice. Prerequisite: FMLY 3800 (062.380) and completion of 72 credit hours.



**FMLY 4802** Family Violence Prevention Cr.Hrs.3  
Family violence prevention theories, research, practices and policies will be critically reviewed with regard to issues such as gender, culture, sexual orientation and others.  
Prerequisites: FMLY 3802 or FMLY 3806. Not to be held with the former FMLY 4800 (0662.480).

**FMLY 4900** Families, Housing and Community: An Action Perspective Cr.Hrs.3  
(Formerly 062.490) Examines relationships between families, housing and community; impact of communities on children; best practices for enhancing quality of life in communities; participatory processes for working with communities. Significant on-site learning. Emphasis on inner-city. Prerequisite: FMLY 2900 (062.290) or FMLY 3900 (062.390) or consent of instructor.

## SECTION 5: General Human Ecology -2000 Level

**HMEC 2000** Research Methods and Presentation Cr.Hrs.3  
An introduction to research designs, methods and techniques, as well as the practice of disseminating results, in the context of selected determinants of health. Applications in natural and social sciences will be presented. Skills related to presenting research findings will be taught. Prerequisite: STAT 1000 (005.100). Not to be held with HMEC 2050 (028.205).

**HMEC 2030** Human Ecology: Perspectives and Communication Cr.Hrs.3  
(Lab Required)(Formerly 028.203) Theory and practice of written and oral communication set within the context of the subject matter of areas of Human Ecology. Students may not hold credit for HMEC 2030 (028.203W) and 028.103 and 028.204.

**HMEC 2050** Introduction to Research in Human Ecology Cr.Hrs.3  
(Formerly 028.205) A general introduction to research issues in natural and social sciences and their application in the various subject areas in human ecology. Prerequisites: [HMEC 2030 (028.203W or 028.103W)] and STAT 1000 (005.100)M.

**HMEC 2650** The Social Aspects of Aging Cr.Hrs.3  
(Formerly 028.265) An examination of the social aspects of aging. Emphasis on understanding the aging process as a life transition involving adaptation through interaction with social and physical environments. Students may not hold credit for HMEC 2650 (028.265) or SWRK 2650 (047.265) or REC 2650 (123.265).

## SECTION 5: General Human Ecology -3000 Level

**HMEC 3000** Introduction to Social Epidemiology Cr.Hrs.3  
This course provides an overview of the basic concepts, principles and methods of social epidemiology and their applications for research and practice from a human ecology perspective. Applications to social determinants of health across the life course may include but are not limited to income and food security, early child development and others. Prerequisites: HMEC 2000[ or HMEC 2050] or any

2000-level or higher research course and HEAL 2600[or HMEC 2030].

**HMEC 3100** Communication for Professional Practice Cr.Hrs.3  
(Formerly 028.310) Advanced communication skills as applied to professional practice in the fields of human ecology. Students may not hold credit for HMEC 3100 (028.310) and 028.204. Prerequisites: 39 credit hours in the Human Ecology program and HMEC 2030 (028.203 or 028.103).

**HMEC 3500** Developmental Health Cr.Hrs.3  
This course examines how social inequalities affect population health across the lifespan. It is guided by the determinants health with a particular focus on socioeconomic variables. Local, provincial, national and international perspectives provide meaningful insight into the roles of equality and inequality. Prerequisite: Any 2000 level research methods course.

## SECTION 5: General Human Ecology -4000 Level

**HMEC 4090** Practicum in Human Ecology Cr.Hrs.6  
(Formerly 028.409) This is a partnership among the university, field supervisor, and the student. It provides an opportunity for students to work in a supervised setting (e.g., health, social services or business) with health professionals as field supervisors. Students also have in-class experiences and assignments with an academic instructor. Prerequisite: 84 credit hours in the Human Ecology General or Interdisciplinary Health program and consent of instructor. Application required. Limited Enrolment.

## SECTION 5: Human Nutritional Sciences - 1000 Level

**HNSC 1100** Nutrition for Healthy Living Cr.Hrs.3  
An introduction to nutrition and practical approaches for healthy diet and disease prevention. Prerequisites: Enrollment in the Aboriginal Community Wellness Diploma program. Not to be held with HNSC 1210

**HNSC 1200** Food: Facts and Fallacies Cr.Hrs.3  
(Formerly 030.120) This course will present facts and fallacies about food from harvest to market forms. Emphasis will be placed on technological development, consumer concerns and factors affecting nutritional quality. Current issues related to food safety and nutritional trends will also be discussed. Not to be held with 030.119.

**HNSC 1210** Nutrition for Health and Changing Lifestyles Cr.Hrs.3  
(Formerly 030.121) This course addresses the relationship between nutrition and health. The focus is on healthy eating and on strategies for modifying food patterns within the context of lifestyle and culture. Not to be held with 030.117 or 030.323 or HNSC 1100.

**SECTION 5: Human Nutritional Sciences -****2000 Level**

**HNSC 2130** Nutrition Through the Life Cycle Cr.Hrs.3  
(Formerly 030.213) Examination of nutritional needs throughout the life cycle, the nutritional concerns of different age groups and the development of healthy eating practices. Not to be held with 030.304. Prerequisite: HNSC 1210 (030.121).

**HNSC 2140** Basic Principles of Human Nutrition Cr.Hrs.3  
(Formerly 030.214) The scientific principles underlying nutrient function and dietary requirements. Prerequisites: A grade of C or higher in [CHEM 2770 or MBIO 2770 (002.277 or 060.277) or CHEM 2360 or MBIO 2360 (002.236 or 060.236)] and [HNSC 1210 (030.121) and HNSC 1200 (030.120)] or [FOOD 2500 (078.250)]. Not to be held with the former 030.325.

**HNSC 2150** Composition, Functional and Nutritional Properties of Foods Cr.Hrs.3  
(Formerly 030.215) Food composition, food market forms, food composition data for nutritional assessment and labelling. Prerequisites: HNSC 1200 (030.120) and HNSC 1210 (030.121) and [CHEM 1320 or CHEM 1310 (002.132 or 002.131)].

**HNSC 2160** Principles of Food Preparation and Preservation Cr.Hrs.3  
(Lab Required)(Formerly 030.216) Food preparation, preservation, handling and storage; quality and safety implications; scientific basis for culinary practice; use and application of equipment. Prerequisite: HNSC 1200 (030.120) and [CHEM 1320 or CHEM 1310 (002.132 or 002.131)]. Not to be held with 030.211 or 030.324.

**SECTION 5: Human Nutritional Sciences -****3000 Level**

**HNSC 3260** Food Quality Evaluation Cr.Hrs.3  
(Formerly 030.326) Discussion of quality concepts and quality assurance principles for food applications, and of methods for evaluation of sensory, chemical and physical aspects of quality. The course will include food industry visits and demonstrations of food testing techniques. Prerequisites: [HNSC 2160 (030.216) or FOOD 3010 (078.301)] and STAT 2000 (005.200).

**HNSC 3300** Vitamins and Minerals in Human Health Cr.Hrs.3  
(Formerly 030.330) The physiological importance of vitamins and minerals in the human body, including factors affecting dietary requirements, metabolism and roles in disease progression and prevention. Prerequisites: [CHEM 2780 or MBIO 2780 (002.278 or 060.278) or CHEM 2370 or MBIO 2370 (002.237 or 060.237)] and HNSC 2140 (030.214) and [BIOL 1412 or 2420 (ZOOL 1330 or 2540, 022.133 or 022.254)]. Not to be held with the former 030.426.

**HNSC 3310** Macronutrients and Human Health Cr.Hrs.3  
(Formerly 030.331) Macronutrient functions and metabolic roles in human health, including the prevention and pathogenesis of various diseases. Prerequisites: [CHEM 2780 or MBIO 2780 (002.278 or 060.278) or CHEM 2370 or

MBIO 2370 (002.237 or 060.237)] and [HNSC 2140 (030.214) and ZOOL 1330 (022.133 or 022.254)]. Not to be held with former 030.325.

**HNSC 3320** Nutrition Education and Dietary Change Cr.Hrs.3  
(Formerly 030.332) Theoretical and practical aspects influencing dietary change at the individual and population level, with emphasis on nutritional education. Prerequisites: [PSYC 1200 (017.120) or SOC 1200 (077.120)] and HNSC 2130 (030.213) and HNSC 2140 (030.214)

**HNSC 3330** Ingredient Technology for Designed Foods Cr.Hrs.3  
(Formerly 030.333) Chemical and functional properties of ingredients and their application in designed foods: low fat, low calorie, high fibre, high energy and innovative food products. Prerequisites: [CHEM 2780 or MBIO 2780 (002.278 or 060.278) or CHEM 2370 or MBIO 2370 (002.237 or 060.237) and HNSC 2150 (030.215)] or [CHEM 2220 (002.222) and FOOD 2500 (078.250)].

**HNSC 3342** Management for Food and Nutrition Professionals Cr.Hrs.3  
Management strategies and cost control principles as applied to food and nutrition organizations. Topics include leadership, organizational design, teamwork, human resource management, performance improvement, cost management, and the interpretation of financial statements. Not to be held with HNSC 3340 (030.334). Prerequisites: HNSC 1200 (030.120) and [GMGT 2030 (027.203) or GMGT 2070 (027.207) or GMGT 2080 (027.208)].

**HNSC 3350** Culture and Food Patterns Cr.Hrs.3  
(Lab Required) A study of the cultural, sociological and psychological aspects of food patterns and behaviour. Not to be held with 030.329. Prerequisites: [PSYC 1200 (017.120) or SOC 1200 (077.120)] and HNSC 1200 (030.120) and HNSC 1210 (030.121).

**HNSC 3870** Food Geographies Cr.Hrs.3  
This course provides a critical examination of the geographies of food at a variety of scales, from the body to the global. The course focuses on themes in three interconnected areas: 1) food production and the global food system from farm to plate including agribusiness and alternative food production and distribution models; 2) food consumption habits and beliefs and foodways as geographically contingent material culture; and 3) food (in) security and its relationship to health and wellbeing. This course is cross-listed with GEOG 3870. Prerequisites: A grade of "C" or better in GEOG 1280, GEOG 1281, GEOG 1200 or HNSC 1200, or permission of the department head.

**SECTION 5: Human Nutritional Sciences -****4000 Level**

**HNSC 4120** Senior Thesis Cr.Hrs.3  
The preparation and presentation of a report based on a survey of the literature or on a laboratory investigation of an approved topic. Prerequisites: Students must be registered in their final year of Human Nutritional Sciences program or the Minor in Human Nutrition and Metabolism. Application required. Enrolment limited. Not to be held with HNSC 4122 or HNSC 4600.

**HNSC 4122** Research Project in Human Nutritional Sciences Cr.Hrs.6

A research project in any aspect of human nutritional sciences, chosen in consultation with the supervising faculty member. A written report and a poster or oral presentation required at the end of the project. Students must be registered in their final year of Human Nutritional Sciences program. Application required. Enrolment limited. May not be held with HNSC 4120 (030.412) OR HNSC 4600.

**HNSC 4140** Quantity Food Production and Management Cr.Hrs.3

(Lab Required)(Formerly 030.414) Menu planning. Food costing. Experience in standard methods of institutional food production and service. Prerequisites: HNSC 3340 or HNSC 3342 (030.334) and HNSC 2160 (030.216) or consent of instructor. Additionally, students must complete the Food Handlers Certificate Program and must submit the form to the Department by June 15th in order to be permitted to enter HNSC 4140.

**HNSC 4160** Seminar in Foods and Nutrition Cr.Hrs.3

(Formerly 030.416) A critical study of research in the field of foods and nutrition; oral and written reports required. Restricted to 4th year majors in the Department. Prerequisites: completion of 84 credit hours in the HNS program and HMEC 2000 or HMEC 3100 (028.310).

**HNSC 4260** Selected Topics in Human Nutrition Cr.Hrs.3 (Formerly 030.426) Recent developments in human nutrition research. Prerequisite: consent of instructor.

**HNSC 4270** Sensory Evaluation of Food Cr.Hrs.3

(Lab Required)(Formerly 030.427) Sensory perception, principles of the sensory analysis of food, requirements for sensory testing, test methods, selection and training of panelists, statistical analysis and interpretation of data. Prerequisites: [HNSC 2160 (030.216) or FOOD 3010 (78.301) or ENTM 3240 (038.324)] and STAT 2000 (005.200) or equivalent.

**HNSC 4280** Food Product Development Cr.Hrs.3

(Formerly 030.428) This course focuses on food industry product development procedures. Emphasis will be on application of basic knowledge of foods and food processing in designing a new product. Prerequisites: MKT 2210 (118.221) and STAT 2000 (005.200) and [one of FOOD 3010 (078.301) or HNSC 3330 (030.333)]. Not to be held with FOOD 4510 (078.451).

**HNSC 4290** Food, Nutrition and Health Policies Cr.Hrs.3

(Formerly 030.429) Principles and applications of policies, regulations and legislation in the areas of food and health that address nutrition and health problems of populations. Not to be held with the former 030.328. Prerequisites: HMEC 2000(or 2050 or 028.205) and HNSC 2130 (030.213) and HNSC 2150 (030.215) and STAT 2000 (005.200).

**HNSC 4300** Community Nutrition Intervention Cr.Hrs.3

(Formerly 030.430) Principles of planning and evaluating nutrition related interventions. Examples of community needs assessments, program planning strategies and types of program evaluation will be examined. Not to be held with 030.411. Prerequisite: HNSC 3320 (030.332).

**HNSC 4310** Nutrition and the Elderly Cr.Hrs.3

(Formerly 030.431) The role of nutrition in health promotion

and disease prevention during aging. Prerequisites: HNSC 3310 (030.331) and HNSC 3320 (030.332). Prerequisite or corequisite: HNSC 3300 (030.330). Offered in alternate years, opposite HNSC 4340.

**HNSC 4320** Nutrition Management of Disease States Cr.Hrs.3

(Lab Required)(Formerly 030.432) Nutritional assessment and dietary management of acute and chronic disease states. Prerequisite or corequisite: HNSC 3300 (030.330) and HNSC 3310 (030.331) and HNSC 3320 (030.332). Not to be held with 030.423 or 030.424.

**HNSC 4340** Maternal and Child Nutrition Cr.Hrs.3

(Formerly 030.434) The role of nutrition in normal human development from conception through childhood. Prerequisites: HNSC 3310 (030.331) and HNSC 3320 (030.332). Prerequisite or corequisite: HNSC 3300 (030.330). Offered in alternate years opposite HNSC 4310.

**HNSC 4350** Nutrition in Exercise and Sport Cr.Hrs.3

(Formerly 030.435) The application of nutritional regimens to meet exercise requirements and improve athletic performance. Current practices and recommendations for different types of sports will be examined. Prerequisites: [HNSC 1210 (030.121)] and [PHED 3430 (057.343), or KIN 3470, or PHED 3470] or [ZOO 1330 (002.1330)]

**HNSC 4362** Nutrition Option Practicum Cr.Hrs.6

Practical applications of nutrition principles in a variety of public service and research applications. Prerequisites: completion of 84 credit hours in the Human Nutritional Sciences program with two of the following courses: HNSC 3300, HNSC 3310, HNSC 3320, and HNSC 3330. Application to the department is required. Limited enrolment.

**HNSC 4364** Foods Industry Option Practicum Cr.Hrs.6

This course involves supervised application of food quality, safety, and management principles in a commercial or government setting. Requirements include 280 hours of work related to the field experience. Prerequisites: Completion of 84 credit hours in Human Nutritional Sciences, including the following courses from the Food Industry Option: HNSC 3260, HNSC 3330, FOOD 4150 and one of GMGT 2030, GMGT 2070 or GMGT 2080. Application to department is required. Limited enrolment.

**HNSC 4540** Functional Foods and Nutraceuticals Cr.Hrs.3

(Formerly 030.454) This course will examine the bioactive components of functional foods and nutraceuticals, their sources, chemistry, process technology, efficacy, safety and regulation. Prerequisite: [CHEM 2770 or MBIO 2770 (002.277 or 060.277) or CHEM 2360 or MBIO 2360 (002.236 or 060.236)]. Not to be held with FOOD 4540 (078.454).

**HNSC 4600** Practice-based Research in Human Nutritional Sciences Cr.Hrs.3

A practice-based research project relevant to dietetic practice. Prerequisite: Registration in the 4th year of the Human Nutritional Sciences program and any two of HNSC 3300, HNSC 3320 & HNSC 3330, and instructor permission required. Enrolment limited to students pre-selected by the Manitoba Partnership Dietetic Education Program. Not to be held with HNSC 4120 or HNSC 4122



## SECTION 5: Interdisciplinary Health Degree Program -2000 Level

**HEAL 2600** Integration of Health Determinants of Individuals Cr.Hrs.3

Students study, integrate and apply the determinants that affect the health of individuals throughout the life span to selected case or learning scenarios. The case or learning scenarios present a variety of issues in the delivery of health-related services that are intended to benefit individual health. Prerequisites: One of CHEM 1300 (002.130) or BIOL 1020 (071.102) or STAT 1000 (005.100); and one of PSYC 1200 (017.120) or SOC 1200 (77.120) or consent of instructor.

## SECTION 5: Interdisciplinary Health Degree Program -3000 Level

**HEAL 3600** Integration of Health Determinants for Communities Cr.Hrs.3

Students study, integrate and use community level determinants of population health in selected case or learning scenarios. These cases present a variety of issues in the design of health related services that are intended to benefit population health. Prerequisites: HEAL 2600 and 39 credit hours in the Curriculum for Interdisciplinary Health or consent of instructor.

## SECTION 5: Interdisciplinary Health Degree Program -4000 Level

**HEAL 4600** Integration of Health Determinants for Canada and World Cr.Hrs.3

Students use selected case or learning scenarios to study the determinants of population health that depend on decision making in governmental or international agencies. The case scenarios present a variety of issues in the governance and management of population health. Prerequisites: HEAL 3600 and 57 credit hours in the Curriculum for Interdisciplinary Health or consent of instructor.

**HEAL 4610** Health Studies Capstone Cr.Hrs.3

Students will explore selected topics from the social sciences to synthesize and evaluate actions that can affect the health of people. The course summarizes the social sciences knowledge that forms the basis for all health related professional work. Prerequisite: A grade of C+ in HEAL 3600 and 57 credit hours in the Curriculum for Interdisciplinary Health or consent of instructor. Restricted to students in Health Sciences and Health Studies.

**HEAL 4620** Health Sciences Capstone Cr.Hrs.3

Students will explore selected topics from the biological sciences to synthesize and evaluate actions that can affect the health of people. The course summarizes the biological science knowledge that forms the basis for all health related professional work. Prerequisite: a grade of C+ in HEAL 3600 and 57 credit hours in the Curriculum for Interdisciplinary Health or consent of instructor. May not hold with HEAL 4610

**HEAL 4650** Selected Topics in Interdisciplinary Health Cr.Hrs.3

The opportunity to carry out individual study in the area of interdisciplinary health. When enrolment warrants, special topics may be offered in a regular course format. Prerequisite: Consent of Instructor and Chairperson.

## SECTION 5: Textile Sciences -1000 Level

**TXSC 1600** Textiles for Living Cr.Hrs.3

(Lab Required)(Formerly 064.160) This course covers the fundamental knowledge of textiles in a product development context. It includes properties of fibres, yarns and fabrics; characteristics of natural and manufactured fibres; chemical structures of the most commonly used natural and manufactured fibres for apparel and non-apparel end uses; woven, knitted, and non-woven structures; and dyeing and printing. Not to be held with 064.102.

**TXSC 1610** Textiles, Product, and Consumers Cr.Hrs.3

(Formerly 064.161) This course covers the structure and characteristics of the natural and manufactured fibre sectors; downstream industries which transform natural or manufactured fibres into intermediate goods; the manufacturing industry which transforms intermediate supplies to final products; and the retailing industry which distributes final textile products to consumers or organizations.

## SECTION 5: Textile Sciences -2000 Level

**TXSC 2420** History of Textiles Cr.Hrs.3

(Formerly 064.242) Development and diffusion of textile fibres, fabrics, and finishes from prehistoric times to present. May not hold with 064.332.

**TXSC 2500** Preparation for Product Development Cr.Hrs.1

Designed for students with little or no background in textile product assembly or for students who require a refresher course. This course provides an orientation to textile product assembly equipment, construction, techniques, and terminology. Students must pass this course before they will be permitted to continue in TXSC 2630. For Textile Sciences students only. NOTE: The credit associated with this course will not be counted toward the minimum credit hour requirements of the Textile Sciences degree. (Pass/fail grade).

**TXSC 2600** Textiles for Apparel End Uses Cr.Hrs.3

(Formerly 064.260) Theories of product development and their applications to creating textile products for apparel end uses including fashion apparel; apparel for consumers throughout the lifespan, including childhood, young adults, older adults; apparel for consumers with disabilities; apparel for professional sports and recreation; and apparel for the healthcare sector. Prerequisites: [064.102] or [a minimum grade of C in TXSC 1600 (064.160) and TXSC 1610 (064.161) and 3 credit hours of 100-level chemistry].

**TXSC 2610** Textiles for Non Apparel End Uses Cr.Hrs.3

(Formerly 064.261) Product development theories from engineering and management perspectives to illustrate the development of textile fibres, fabrics, and products for the industrial and healthcare sectors. Industrial uses of textiles include the automotive and the aerospace industries. End



uses for the healthcare sector include textiles or textile products for rehabilitation, protection from bacteria, healing of wounds, and implantable textiles. Assessment of selected fabric properties such as strength, flammability, colourfastness and air permeability will be introduced. Prerequisites: [064.102] or [a minimum grade of C in TXSC 1600 (064.160) and TXSC 1610 (064.161) and 3 credit hours of 100-level chemistry].

**TXSC 2620** Consumer and Organizational Behaviour Toward Textile Products Cr.Hrs.3  
(Formerly 064.262) Theories and practices of consumer and organizational decision making with respect to textile products. Prerequisites: TXSC 2600 (064.260) or TXSC 2610 (064.261). Not to be held with MKTG 3230 (118.323).

**TXSC 2630** Pattern Development in an Industrial Environment Cr.Hrs.3  
(Lab Required)(Formerly 064.263) This course covers the process of communicating product design through pattern development. Students will learn the terminologies of pattern development, techniques of pattern development and manipulation, and the importance of anthropometry in creating apparel to suit its end uses. Prerequisite: TXSC 2500; TXSC 2600 (064.260). Not to be held with the former 064.348.

## SECTION 5: Textile Sciences -3000 Level

**TXSC 3470** SELECTED TOPICS Cr.Hrs.3  
(Formerly 064.347) Directed study in a specific area of clothing and/or textiles. Prerequisite: consent of instructor and 60 credit hours in the Clothing and Textiles program.

**TXSC 3500** Textiles for the Healthcare Sector Cr.Hrs.3  
(Formerly 064.350) This course covers the recent developments of a range of technical textiles for the healthcare sector, including implantable textiles, barrier fabrics, and smart textiles. Prerequisite: TXSC 2610 (064.261) and [HMEC 2050 (028.205) or any 2000-level or 3000-level research method course] and CHEM 1000 (001.100) or CHEM 1300 (002.130). Not to be held with 064.347 which was offered from September 2004 to September 2005/2006.

**TXSC 3600** Global Apparel and Textiles Trade Cr.Hrs.3  
(Formerly 064.360) Covers the role of apparel and textiles trade in economic growth and development of industrialized, transitional, and developing nations. It will take into account the evolution of trade relations among apparel and textile producing countries and regions. Prerequisite: [TXSC 2620 (064.262)] and [ECON 1010 and 1020 (ECON 1200 (018.120) or ECON 1210 (018.121)] and [ECON 1220 (018.122)] and [HMEC 2000 or HMEC 2050 (028.205)]. Not to be held with the former 064.340.

**TXSC 3610** Product Standards and Specifications Cr.Hrs.3  
(Formerly 064.361) Challenge students to apply their knowledge and skills gained in TXSC 2600, TXSC 2610 and TXSC 2620 to develop textiles and textile product standards and specifications for various forms of product development (e.g., private label, national brands, licensed goods) where there are no known precedents. Students will learn the process of developing product standards by working on case studies. Textile products will include apparel and non-apparel end uses. Prerequisites: TXSC 3620 (064.362) and

[HMEC 2000 or HMEC 2050 (028.205)]. Not to be held with 064.220 or 064.221 or 064.337.

**TXSC 3620** Evaluation of Textile Performance Cr.Hrs.3  
(Lab Required)(Formerly 064.362) Covers the serviceability of textile products for apparel and non apparel end uses. Students will learn to carry out commonly used textile testing methods for assessing durability, comfort, aesthetic properties and safety. Prerequisites: TXSC 2600 (064.260) and TXSC 2610 (064.261). Not to be held with the former 064.220 or 064.221 or 064.337.

**TXSC 3630** Line Planning and Visual Communication Cr.Hrs.3  
(Formerly 064.363) Covers the steps in developing a line of textile products for apparel and home furnishings end uses and the techniques of communicating product information to relevant members of the supply chain. Students will learn manual methods and computer aided design solutions to communicate product concepts. Prerequisite: TXSC 2630 (064.263). Not to be held with the former 064.225.

**TXSC 3640** Pattern Development in a Computer Aided Design Environment Cr.Hrs.3  
(Formerly 064.364) This course is a continuation of TXSC 2630. It covers advanced pattern manipulations using an industrial computer aided design system. Prerequisite: TXSC 2630 (064.263) and TXSC 3650 (064.365). Not to be held with 064.349.

**TXSC 3650** Production of Textile Products Cr.Hrs.3  
(Formerly 064.365) Covers the role of production in the product development process. Students will learn the terminology which meets industrial standards, the most commonly used production techniques for apparel and non apparel products, time studies, costing, development of specifications, manufacturing systems, and selected test methods for quality management. Prerequisites: TXSC 2630 and [HMEC 2000 or HMEC 2050 (028.205)]. Not to be held with 064.224 and 064.342

**TXSC 3700** Special Topics in Textile Sciences Cr.Hrs.6  
This course will vary from year to year depending on the trends within the textile/apparel complex. Students will be given the opportunity to study a detailed area of textile sciences through a field experience or travel study. Prerequisite: Permission of the instructor.

## SECTION 5: Textile Sciences -4000 Level

**TXSC 4210** Seminar in Clothing and Textiles Cr.Hrs.3  
(Formerly 064.421) Critical study of literature and other information sources in the field of clothing and textiles. Oral and written reports required. Restricted to fourth year majors in the department.

**TXSC 4260** Cr.Hrs.3  
(Formerly 064.426) Application of marketing in the textile industries. Prerequisites: 064.340 and MKTG 2210 (118.221).

**TXSC 4310** PRACTICUM Cr.Hrs.3  
(Formerly 064.431) Supervised practical experience in the clothing and textile field in an appropriate off-campus setting. Prerequisite: completed 84 credit hours in the Clothing and



Textiles program. GPA is considered; limited enrolment.

**TXSC 4320** Selected Topics in Clothing and Textiles

1 Cr.Hrs.3

(Formerly 064.432) Directed study in a specific area of clothing and/or textiles. Prerequisite: Consent of instructor and 84 credit hours in the Clothing and Textiles program.

**TXSC 4340** SENIOR PROJECT Cr.Hrs.3

(Formerly 064.434) Independent study on an approved topic in a) marketing, production or design of apparel, b) history of costume and textiles, c) sociopsychological aspects of clothing, or d) textile performance, preservation and use. A detailed proposal for the study must be submitted in order to register. Prerequisite: completed 84 credit hours in the Clothing and Textile program and consent of department head.

**TXSC 4500** Advanced Textiles for the Healthcare Sector Cr.Hrs.3

Covers the latest developments in technical textiles for the healthcare sector and the measurement of attributes which are essential to the performance of textiles for medical or healthcare end uses. Prerequisites: A grade of "C" or better in: [TXSC 2600 (064.260)] and [TXSC 2610 (064.261)] and [TXSC 3620 (064.362)] and [TXSC 3500 (064.350)] and [CHEM 2220 (022.222)].

**TXSC 4600** The Information Age and the Textiles Supply Chain Cr.Hrs.3

Covers the evolution of the textile complex from a production orientation to a logistics orientation; the role of information technology in creating or enhancing competitive advantage; the range of technologies used by the textile complex to communicate design, production, and management information throughout the supply chain; decision making process executives go through to decide which types of technology to purchase, how to implement them within the firm, the financial implications, the effects on business-to-business communication, and the effects on business-to-consumer communication. Prerequisite: TXSC 3600.

**TXSC 4610** Integrative Project Cr.Hrs.6

This is a required course in which students are required to demonstrate their ability to integrate the skills and knowledge accumulated in the program. Specifically, students will solve a specific textile or product development problem which may originate from the students' interests, developed in collaboration with academic staff, or community-based. Prerequisite: TXSC 3610 (064.361) and TXSC 3630 (064.363) and TXSC 3640 (064.364). Not to be held with the former 064.430 or TXSC 4340 (064.434) or TXSC 4210 (064.421) or TXSC 4310 (064.431).

**TXSC 4620** Colour Management Cr.Hrs.3

Covers the basic concepts and principles of colour science, the process of determining seasonal colour palette, colour specification systems, colour notation systems, commercial colour identification systems, the colour approval process in industrial, institutional, and consumer goods settings, colour measurement, and interpretation of colour data. Students will learn the process of preserving colour integrity throughout the supply chain. Prerequisites: TXSC 3610 (064.361). Not to be held with the former 064.339 or 064.430.

**TXSC 4630** Quality Assurance Systems Cr.Hrs.3

Covers the concept of total quality management; the role of

total quality management in apparel and textiles; the role of standard setting agencies in developing standards of product and service quality; management systems such as ISO 9000 and case studies of textiles and apparel firms which have adopted these systems. Students will learn by solving a series of problems presented to them in the format of case studies. Prerequisites: TXSC 3650 and TXSC 4620. Not to be held with 064.220 or 064.221 or 064.337.



## Faculty of Kinesiology and Recreation Management

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**Faculty of Kinesiology and Recreation Management Information**

The mission of the faculty is to discover and disseminate knowledge related to physical activity, human movement, sport, and leisure to improve the health, well-being and quality of life of Manitobans, Canadians and citizens of the world.

**Academic Program Strategic Goals:**

To provide high quality, evidence-based degree programs that prepare students academically and professionally to

create and disseminate knowledge in areas related to human movement and leisure.

**Undergraduate Program Goals:**

To deliver sound undergraduate curricula to students in areas broadly related to physical activity, recreation, and applied health, who by the completion of their undergraduate degrees will:

- have general knowledge and specific knowledge in their fields, including knowledge of current research;
- be able to use critical thinking skills across a broad range of issues in their fields;
- be able to communicate effectively (orally, in writing, and technologically);
- be competent in relevant skills and practices;
- be literate in common information technology;
- be advocates for healthy living;
- respect diversity;
- be prepared for future employment and/or study in their fields.

**SECTION 1: Degree Programs Offered**

**1.1 Programs/Majors,**

Program/Degree	*Years to Complete	Total Credit Hours
Bachelor of Physical Education	3	102
Bachelor of Kinesiology	4	120
Bachelor of Kinesiology- Athletic Therapy	4	126
Bachelor of Recreation Management and Community Development	4	120

\*This includes one year (30 credit hours) of study in University 1.

**1.2 Available Minor,**

Minor in Recreation Studies (See Section 4.6 for details)

**1.3 Available Option,**

Interfaculty Option in Aging (See Section 4.7 for details)

**1.4 Available Areas Of Emphasis:,**

- Aging (BKin and BRMCD)
- Community Development and Wellness (BKin and BRMCD)
- Culture and Diversity (BKin and BRMCD)
- Coaching (BKin only)
- Fitness Professional (BKin only)
- Sport and Event Management (BRMCD only)
- Sustainable Tourism and Recreation (BRMCD only)

**SECTION 2: Admission Requirements Admission Information**

The following is a summary of the admission requirements for the Faculty of Kinesiology and Recreation Management. All admission requirements, as well as application deadline dates and forms, are included in the Applicant Information Bulletin that is available from the Admissions Office, Enrolment Services, 424 University Centre; this information is also posted on the University of Manitoba [website](#) in January each year.

**Direct Entry (from High School)**

New for the 2012-2013 academic year, the Faculty of Kinesiology and Recreation Management began accepting some students into our three degree programs (excludes Athletic Therapy) directly from High School.

In addition to the general U of M admission requirements for high school students, to be *considered* for direct entry into the Faculty of Kinesiology and Recreation Management you



will require a minimum 85% average over the following courses, with no less than 60% in each individual course:

- English 40S
- Mathematics 40S
- Biology 40S (*recommended for B.Kin.*), Chemistry 40S, Physics 40S, or Social Studies 40S (World Human Geography, Western Civilization History, or Social Studies: World Issues)

Any student applying for Direct Entry admission to this faculty will automatically be considered for admission to University 1, should they not be granted Direct Entry admission.

#### Regular Admission (from U1 or another academic program)

The general admission requirement for all degrees except Bachelor of Kinesiology – Athletic Therapy is completion of any 24 credit hours of University 1 coursework. However, in order to complete the degree in the shortest time possible it is recommended that students take the required Year 1 courses before applying to the Faculty. Entering students who have not completed all of the required Year 1 courses must complete them during their program. Equivalent academic course work completed from other recognized post secondary institutions will be considered.

Minimum GPA for admission consideration is 2.0 but admission is competitive.

Applicants who are members of traditionally disadvantaged groups (i.e., Aboriginal peoples, persons with disabilities, visible minorities, recent immigrants, etc.) may apply under a Special Consideration Category. Further information on the criteria for this category is available by contacting the Faculty.

#### 2.1 Admission Requirements: Bachelor of Kinesiology,

Completion of a minimum of any 24 credit hours in University 1. However, in order to complete the degree in four years, the following first-year courses are recommended (30 credit hours):

BIOL 1020 Biology 1: Principles and Themes **and** BIOL 1030 Biology 2: Biological Diversity, Function and Interaction (with a minimum grade of "C" in each) **or** BIOL 1000 Biology: Foundations of Life **and** BIOL 1010 Biological Diversity and Interaction (with a minimum average grade of "C+"). Successful completion of BIOL 1020 and BIOL 1030 or BIOL 1000 and BIOL 1010 is required for admission to the Athletic Therapy Program and is strongly recommended for admission to Kinesiology.

PERS 1200 Physical Activity, Health and Wellness

PERS 1400 Concepts of Recreation and Leisure

PERS 1500 Foundations of Physical Education and Kinesiology

PSYC 1200 Introduction to Psychology

STAT 1000 (M) Basic Statistical Analysis 1

3 credit hours to fulfill the Written English Requirement

3 credit hours of Electives

#### 2.2 Admission Requirements: Bachelor of Physical Education,

Completion of a minimum of any 24 credit hours in University 1. However, in order to complete the degree in three years, the following first-year courses are recommended (30 credit hours):

BIOL 1410 Anatomy of the Human Body and BIOL 1412 Physiology of the Human Body (minimum grade of "C")

**NOTE:** BPE students who have completed BIOL 1020 and BIOL 1030 will also be required to take BIOL 1412, as BIOL 1412 is a pre-requisite for KIN 3470.

Written English Requirement: ENGL 1XXX English Literature (6 credit hours)

PERS 1500 Foundations of Physical Education and Kinesiology

PSYC 1200 Introduction to Psychology

A course that satisfies the Mathematics requirement from the Mathematics or Statistics department

6 credit hours of Electives (in area of teachable minor)

#### 2.3 Admission Requirements: Bachelor of Recreation Management and Community Development,

Completion of a minimum of any 24 credit hours in University 1. However, in order to complete the degree in four years, the following first-year courses are recommended (30 credit hours):

PERS 1200 Physical Activity, Health and Wellness

PERS 1300 Introduction to Leisure Travel

PERS 1400 Concepts of Recreation and Leisure

PERS 1500 Foundations of Physical Education and Kinesiology

PSYC 1200 Introduction to Psychology

STAT 1000 (M) Basic Statistical Analysis 1



3 credit hours to fulfill the Written English Requirement

6 credit hours of Electives

#### 2.4 Additional Admission Requirements,

**High School Prerequisites:** Math 40S (minimum grade of 50%) is required for all programs. Biology 40S (minimum grade of 50%) is required for BKin and BPE. Chemistry 40S and Physics 40S are not required but may be helpful for BKin and BPE.

**Valid Health Care Provider CPR and Standard First Aid** certification are required for successful applicants to the Bachelor of Kinesiology - Athletic Therapy Program, prior to the commencement of courses in this program.

#### 2.5 Transfer and Second Degree Students,

Students admitted to the Faculty of Kinesiology and Recreation Management following the completion of another recognized university degree or coursework may transfer in credit that is deemed equivalent toward the course requirements of a Kinesiology and Recreation Management undergraduate degree. Students are eligible to transfer a maximum of 50 credit hours to the Bachelor of Physical Education degree and a maximum of 60 credit hours to the Bachelor of Kinesiology and Bachelor of Recreation Management and Community Development programs.

Students who hold a degree and have completed further courses at the University of Manitoba which are applicable to their second degree in the Faculty of Kinesiology and Recreation Management but which were not used for credit toward their first degree may receive additional transfer credit for that work.

Equivalent courses completed at other universities or post-secondary institutions will be considered for admission and transfer credit only if the courses have been taken within the last 10 years.

Students are encouraged to contact an [Academic Advisor](#) in the Faculty General Office for information on how to optimize their transfer credit. Course transfer equivalencies will not be processed until after an application and all necessary documents have been submitted.

#### 2.6 Visiting Students,

Students who are enrolled and pursuing a degree at another institution may apply to be a visiting student with the Faculty of Kinesiology and Recreation Management. A Letter of Permission from the home institution granting permission to register for courses from the University of Manitoba is required in order for access to be granted to those courses.

#### 2.7 Special Students, After-Degree Special Students

Students who have successfully completed a first degree program in a related field who are not seeking another degree and wish to register for courses from the Faculty of Kinesiology and Recreation Management are eligible to apply as Special Students.

### SECTION 3: Faculty Academic Regulations

All students are asked to note that some academic policies and regulations may be subject to change. Please check the Web Calendar at [umanitoba.ca](http://umanitoba.ca) for updated information.

The provisions of the following chapters from the Undergraduate Calendar (University Policies, and General Academic Regulations and Requirements) apply to all students. In addition, the Faculty of Kinesiology and Recreation Management has regulations and requirements, published below, that apply specifically to its students.

#### 3.1 Scolastic Standards: Academic Assessment, Scholastic Standards:

Formal academic assessments are performed following each term for all Faculty of Kinesiology and Recreation Management students who have completed 3 or more credit hours. As a result of this assessment students will be determined to be minimum met, satisfactory, on probation, suspension warning, or academic suspension for one year. All academic assessments will appear on the student's official transcript.

##### Minimum Met

Students must achieve a minimum DGPA of 2.0 at each point of assessment in order to have met the minimum requirements of the Faculty of Kinesiology and Recreation Management. Students who do not achieve a minimum DGPA of 2.0 will be placed on probation.

##### Probation

Once placed on probation, a student will be placed on hold and must meet with an academic advisor to review performance and to receive an override in order to register for another term. Students on probation who achieve a minimum term GPA of 2.0 will be assessed as satisfactory. Students who do not achieve a minimum term GPA of 2.0 will be placed on suspension warning.

##### Satisfactory

The assessment of satisfactory is used once a student has been placed on probation but has subsequently achieved a minimum term GPA of 2.0. Students with satisfactory standing will be able to register without restrictions. Students who do not maintain a minimum term GPA of 2.0 will be placed on suspension warning.



### Suspension Warning

Once placed on suspension warning, a student must meet with an academic advisor before registering for another term. Students on suspension warning who achieve a minimum term GPA of 2.0 will be assessed as satisfactory. Students who do not achieve a minimum term GPA of 2.0 will be placed on academic suspension.

### Academic Suspension

A student placed on academic suspension in the Faculty of Kinesiology and Recreation Management is not permitted to register for a period of one calendar year. The notation "Academic Suspension for 1 Year" will be recorded on the student's transcript.

Once a student has served a one year suspension, they must contact an academic advisor in order to be reinstated for future registration.

### 3.2 Policy on Repeating Faculty Required Courses,

A minimum grade of "C" is required to pass all Faculty-required courses. Students will be permitted to repeat a failed Faculty-required course **only once while in the program**. Students who fail the same Faculty-required course twice will normally be required to withdraw from the program.

### 3.3 Dean's Honour List,

Students enrolled in 12 credit hours or more who achieve a Term GPA of 3.50 or higher will be placed on the Dean's Honour List. The Dean's Honour List will be calculated after each term (i.e. Fall, Winter, and Summer).

The Dean's Honour List designation will appear on the student's transcript.

### 3.4 University Gold Medal and Program Medals, Gold Medal

The Faculty of Kinesiology and Recreation Management will award the University Gold Medal to the graduating student who:

- 1) has achieved the highest grade point average of all graduating students (minimum 3.75) on courses constituting the last two years of an eligible program (and including transfer courses in the applicable years); and,
- 2) has completed at least 80 percent of what is considered to be the normal full course-load in each of the last two years of the eligible program.

### Program Medals

There are two program medals awarded each year in the Faculty of Kinesiology and Recreation Management to the two students with the highest standing (according to the University Gold Medal criteria) in the programs in which the winner of the University Gold Medal in Kinesiology and Recreation Management is not registered (the three programs are Kinesiology, Physical Education, and Recreation Management and Community Development).

### 3.5 Degree With Distinction,

Awarded to students who graduate with a cumulative Degree GPA of 3.8 or higher. The notation of 'Degree with Distinction' will appear on the student's parchment and transcript.

### 3.6 Attendance and Withdrawal,

Students absent from class for three or more days due to illness are required to present a certificate from a physician. Unexcused absence of more than three hours of class time in a theory course or experiential learning course may result in the student being required to withdraw from the course or may result in an "F" grade being assigned.

### 3.7 Leave of Absence,

Students who have not registered for a full academic session will need to reactivate their status by contacting the Faculty General Office and must consult with an Academic Advisor. Students who have been absent from study for more than 5 years or have attended another institution since their last registration (not on a Letter of Permission) will have to re-apply for admission to the university.

### 3.8 Time Limit for Completion of the Degree,

Students admitted to the Bachelor of Kinesiology, Bachelor of Physical Education, or Bachelor of Recreation Management and Community Development degree programs must complete all requirements to graduate within ten years of admission to the program. Students with questions relating to the time limit regulation should consult the Undergraduate Program Administrator.

### 3.9 Academic Integrity,

The Faculty of Kinesiology and Recreation Management strictly adheres to the University of Manitoba Student Discipline By-Law and will enforce these regulations. It is the responsibility of the student to know what constitutes academic dishonesty. Plagiarism or any other form of cheating is subject to academic penalty, which could be as serious as suspension or expulsion from the Faculty or university. Students are encouraged to avoid academic misconduct by learning more about the University of Manitoba regulations at:  
[http://umanitoba.ca/student/resource/student\\_advocacy/index.html](http://umanitoba.ca/student/resource/student_advocacy/index.html)

### 3.10 Student Academic Appeals,

Students who wish to appeal matters concerning their academic status should contact the Faculty of Kinesiology



and Recreation Management Associate Dean (Academic). The Faculty has an academic ap-peals process for students who wish to appeal a policy or decision affecting their program of study.

## SECTION 4: Program and Graduation Requirements

### Degree Requirements and Course Selection

It is the student's responsibility to have read the *Undergraduate Calendar and Registration Guide* carefully, and to know all relevant university and faculty regulations, policies and practices. Completion of degree requirements is the responsibility of the student. Returning students should contact their advisor if they have any questions concerning their curriculum.

The following requirements apply to students in all four undergraduate degree programs in the Faculty. The four degree programs have a base of shared introductory core courses, as well as shared upper level courses with a professional focus. Shared core courses are intended to ensure students recognize the interconnections across our Faculty and its related fields of practice, and to facilitate the professional education of students.

#### Course Prefixes:

**KIN** Denotes required and elective courses in the Kinesiology degree program

**PERS** Denotes elective and core courses common to the undergraduate degree programs

**PHED** Denotes required and elective courses in the Physical Education degree program

**REC** Denotes required and elective courses in the Recreation Management and Community Development degree program

#### Introductory Core Courses (18-21 credit hours):

PERS 1400 Concepts of Recreation and Leisure 3

PERS 1500 Foundations of Physical Education and Kinesiology 3

#### YEAR 1 / University 1: 30 Credit Hours

Course No.		Cr.Hrs.
BIOL 1XXX	BIOL 1020 Biology 1: Principles and Themes <b>and</b> BIOL 1030 Biology 2: Biological Diversity, Function and Interaction (with a minimum grade of "C" in each) <b>or</b> BIOL 1000 Biology: Foundations of Life <b>and</b> BIOL 1010 Biological Diversity and Interaction (with a minimum grade of "C+")	3
PERS 1200	Physical Activity, Health and Wellness	3

PSYC 1200 introduction to Psychology 3

#### University Math Requirement:

STAT 1000 Basic Statistical Analysis 1 3 (or MATH 1XXX Mathematics)\*

#### University Written Requirement:

Any course satisfying Written English Requirement 3 or (ENGL 1XXX English Literature 6)\*\* BPE students only

#### Professional Core Courses (12-15 credit hours):

PERS 2100 Introduction to Professional Practice 3

PERS 2200 Program Planning Principles 3

PERS 3100 Inclusive Physical Activity and Leisure 3

PERS 3460 Sociology of Physical Activity and Leisure\*\* 3

PERS 4100 Current Issues† 3

\*\*In lieu of PERS 3460, KIN 2540 Psychology of Sport and Physical Activity (3) fulfils the social science requirement for Athletic Therapy Program students only

†BKin and BRMCD only

#### 4.1 Program Requirements: Bachelor of Kinesiology, (Students admitted in September 2011 or later)

#### Program and Graduation Requirements: Bachelor of Kinesiology

To graduate with a four-year Bachelor of Kinesiology degree, a student must have passed the 120 credit hours of the program outlined below and must have achieved a Degree Grade Point Average (DGPA) of 2.00 with a minimum grade of "C" in all Faculty-required courses.

A maximum of 158 credit hours may be attempted in order to obtain the 120 credit hours required for graduation with the Bachelor of Kinesiology degree.



PERS 1400	Concepts of Recreation and Leisure	3
PERS 1500	Foundations of Physical Education and Kinesiology	3
PSYC 1200	Introduction to Psychology	6
STAT 1000	Basic Statistical Analysis 1	3
1XXX W	Written English Requirement	3
	Elective	3
<b>YEAR 2: 30 Credit Hours</b>		
<b>Course No.</b>		<b>Cr.Hrs.</b>
BIOL 2410	Human Physiology 1	3
BIOL 2420	Human Physiology 2	3
PERS 2100	Introduction to Professional Practice	3
PERS 2200	Program Planning Principles	6
PERS 3350	Introduction to Research	3
KIN 2320	Human Anatomy	3
KIN 2330	Biomechanics	3
	Electives	9
<b>YEAR 3: 30 Credit Hours</b>		
<b>Course No.</b>		<b>Cr.Hrs.</b>
KIN 2540	Psychology of Sport and Physical Activity	3
KIN 3470	Exercise Physiology	3
KIN 3512	Principles of Fitness Training	3
KIN 3740	Resistance Training and Conditioning	3
PERS 3100	Inclusive Physical Activity and Leisure	3
PERS 3340	Philosophy of Physical Activity and Leisure	3
PERS 3460	Sociology of Physical Activity and Leisure	3
	Electives	9
<b>YEAR 4: 30 Credit Hours</b>		
<b>Course No.</b>		<b>Cr.Hrs.</b>
KIN 3450	Motor Learning	3
KIN 4500	Physical Activity and Aging	3
PERS 4100	Current Issues	3
	Electives	21*

\* PERS 4630 Supervised Fieldwork Experience is strongly recommended in Year 4 (12 credit hours)

\* A maximum of 18 credit hours of electives may be taken from outside the Faculty following Year 1.

**Degree Exit Requirement:** Current Basic Rescuer CPR and Emergency or Standard First Aid Certification

**4.2 Program Requirements: Bachelor of Kinesiology - Athletic Therapy,**  
(Students admitted in September 2011 or later)

**Program and Graduation Requirements: Bachelor of Kinesiology - Athletic Therapy**

To graduate with a four-year Bachelor of Kinesiology – Athletic Therapy degree, a student must have passed the 126 credit hours of the program outlined below and must have achieved a Degree Grade Point Average (DGPA) of 2.00 with a minimum grade of “C” in all Faculty-required courses.

A maximum of 166 credit hours may be attempted in order to obtain the 126 credit hours required for graduation with the Bachelor of Kinesiology - Athletic Therapy.

Students are expected to progress through the Athletic Therapy program as outlined below. It is strongly recommended that courses be completed in the sequence and year indicated, otherwise an additional year may be re-quired.

Successful completion of BIOL 1020 and BIOL 1030, with a minimum grade of “C”, or BIOL 1000 and BIOL 1010, with a minimum average grade of “C+” is a re-quirement for admission to the Athletic Therapy Program.

Valid Health Care Provider CPR and Standard First Aid certification are required before the beginning of each term of registration (if lapsed, students must re-certify). Each year while in the program, Athletic Therapy students must also register as members with both the Manitoba Athletic Therapists Association (MATA) and Canadian Athletic Therapists Association (CATA).

**Athletic Therapy Practica (KIN 3912, KIN 3914 & KIN 4910)**



Students in the Athletic Therapy Program will be required to complete several hours of clinical and field (sports team) experiences on campus and in the community during their degree. These experiences provide opportunities to apply the knowledge and skills students obtain via their educational curriculum, in a practical hands-on manner, and

therefore enhance their preparation for the Canadian Athletic Therapy Association (CATA) examinations. Students must successfully complete the previous year's courses and be registered in all of the present year's courses in order to register in each practicum (KIN 3912, KIN 3914 & KIN 4910).

**YEAR 1 / University 1: 30 Credit Hours**

Course No.		Cr.Hrs.
BIOL 1XXX	BIOL 1020 Biology 1: Principles and Themes <b>and</b> BIOL 1030 Biology 2: Biological Diversity, Function and Interaction (with a minimum grade of "C" in each) <b>or</b> BIOL 1000 Biology: Foundations of Life <b>and</b> BIOL 1010 Biological Diversity and Interaction (with a minimum grade of "C+")	3
PERS 1200	Physical Activity, Health and Wellness	3
PERS 1400	Concepts of Recreation and Leisure	3
PERS 1500	Foundations of Physical Education and Kinesiology	3
PSYC 1200	Introduction to Psychology	6
STAT 1000	Basic Statistical Analysis 1	3
1XXX W	Written English Requirement	3
	Elective	3

**YEAR 2: 33 Credit Hours**

Course No.		Cr.Hrs.
BIOL 2410	Human Physiology 1	3
BIOL 2420	Human Physiology 2	3
HNSC 1210	Nutrition for Health and changing Lifestyles	3
PERS 2100	Introduction to Professional Practice	3
PERS 2200	Program Planning Principles	3
PERS 3350	Introduction to Research	3
KIN 2320	Human Anatomy	3
KIN 2330	Biomechanics	3
KIN 2750	Athletic Therapy Skills	3
KIN 3200	Basic Trauma and Life Support	3
KIN 3320	Advanced Human Anatomy	3

**YEAR 3: 33 Credit Hours**

Course No.		Cr.Hrs.
KIN 3160	Pathology and Sports Medicine	3
KIN 3330	Functional Assessment and Restoration A	3
KIN 3332	Functional Assessment and Restoration B	3
KIN 3400	Therapeutic Modalities	3
KIN 3470	Exercise Physiology	3
KIN 3512	Principles of Fitness Training	3
KIN 3740	Resistance Training and Conditioning	3
KIN 3912	Athletic Therapy Practicum	4
KIN 3914	Clinical Block Placement	2
PERS 3100	Inclusive Physical Activity and Leisure	3
PERS 3340	Philosophy of Physical Activity and Leisure	3

**YEAR 4: 30 Credit Hours**

Course No.		Cr.Hrs.
KIN 2540	Psychology of Physical Activity and Leisure	3
KIN 3450	Motor Learning	3
KIN 4160	Advanced Pathology and Sport Medicine	3
KIN 4330	Advanced Biomechanics	3
KIN 4400	Therapeutic Exercise Rehabilitation	3
KIN 4500	Physical Activity and Aging	3
KIN 4910	Athletic Therapy Practicum	6
PERS 4100	Current Issues	3
	Elective	3

**Degree Exit Requirement:** Current Basic Rescuer CPR and Emergency or Standard First Aid Certification



**4.3 Program Requirements: Bachelor of Physical Education,**

(Students admitted in September 2011 or later)

To graduate with a three-year Bachelor of Physical Education degree, a student must have passed the 102 credit hours of the program outlined below and must have achieved a Degree Grade Point Average (DGPA) of 2.00 with a minimum grade of "C" in all Faculty-required courses.

**Program and Graduation Requirements: Bachelor of Physical Education**

A maximum of 132 credit hours may be attempted in order to obtain the 102 credit hours required for graduation with the Bachelor of Physical Education degree.

**YEAR 1 / University 1: 30 Credit Hours**

<b>Course No.</b>		<b>Cr.Hrs.</b>
BIOL 1410	Anatomy of the Human Body	3
BIOL 1412	Physiology of the Human Body	3
ENGL 1XXXW	English (1200, 1300, or 1310 & 1340)	6
PERS 1500	Foundations of Physical Education and Kinesiology	3
PSYC 1200	Introduction to Psychology	6
'M' Requirement	MATH or STAT course	3
1XXX W	Written English Requirement	3
	Electives / Teaching Minor	6

**YEAR 2: 36 Credit Hours**

<b>Course No.</b>		<b>Cr.Hrs.</b>
KIN 2320	Human Anatomy	3
KIN 2330	Biomechanics	3
PERS 1400	Concepts of Recreation and Leisure	3
PERS 2100	Introduction to Professional Practice	3
PERS 2200	Program Planning Principles	3
PHED 2550	Growth and Motor Development	3
Required Experiential Learning Courses (ELCs):		
PHED 2710	Human Movement Principles (ELC)	3
PHED 2720	Developmental Games and Activities (ELC)	3
PHED 2730	Gymnastics, Dance and Rhythmic Activities (ELC)	3
PHED 2740	Fitness Theory and Practice (ELC)	3
	Electives / Teaching Minor	6

**YEAR 3: 36 Credit Hours**

<b>Course No.</b>		<b>Cr.Hrs.</b>
KIN 2540	Psychology of Sport and Physical Activity	3
KIN 3450	Motor Learning	3
KIN 3470	Exercise Physiology	3
KIN 3512	Principles of Fitness Training	3
PERS 3100	Inclusive Physical Activity and Leisure	3
PERS 3460	Sociology of Physical Activity and Leisure	3
PHED 3360	Culturally Relevant Physical Education and Health	3
PHED 3710	Active Health and Human Potential	3
Faculty Electives		6

Must include 1 or 2 of the following Experiential Learning Courses (ELCs):

PHED 2400	Coaching Theory and Practice (3)	
PHED 2402	Advanced Coaching Theory and Practice (3)	
PHED 3102	Aboriginal Song and Dance (3)	
PHED 3740	Resistance Training and Conditioning (3)	
PHED 3750	Lifestyle Activities (3)	
PHED 3760	Diverse Populations Mentorship (3)	
PHED 3770	Aboriginal Games and Activities (3)	
PHED 4710	Outdoor Education (3)	
REC 4720	Wilderness Adventures (3)	
	Electives / Teaching Minor	6

**Degree Exit Requirement:** Current Basic Rescuer CPR and Emergency or Standard First Aid Certification

**4.4 Program Requirements: Bachelor of Recreation Management and Community Development,**

(Students admitted in September 2011 or later)

**Program and Graduation Requirements: Bachelor of Recreation Management and Community Development**

To graduate with a four-year Bachelor of Recreation Management and Community Development degree, a student must have passed the 120 credit hours of the program outlined below and must have achieved a De-gree



Grade Point Average (DGPA) of 2.00 with a minimum grade of "C" in all faculty-required courses. A maximum of 158 credit hours may be attempted in order to obtain the 120 degree.

credit hours required for graduation with the Bachelor of Recreation Management and Community Development

**Year 1 - University 1: 30 credit hours**

<b>Course No.</b>		<b>Credit Hours</b>
PERS 1200	Physical Activity, Health and Wellness	3
PERS 1300	Introduction to Leisure Travel	3
PERS 1400	Concepts of Recreation and Leisure	3
PERS 1500	Foundations of Physical Education and Kinesiology	3
PSYC 1200	Introduction to Psychology	6
W	Written English Requirement	3
STAT 1000	Basic Statistical Analysis 1	3
	Electives	6

**Year 2: 30 credit hours**

<b>Course No.</b>		<b>Credit Hours</b>
SOC 1200	Introduction to Sociology	6
PERS 2100	Introduction to Professional Practice	3
PERS 2200	Program Planning Principles	3
PERS 3350	Introduction to Research	3
REC 2400	Management and Marketing of Leisure Services	3
REC 3090	Foundations of Sustainable Nature-Based Tourism	3
REC 3850	The Planning of Recreation Areas and Facilities	3
	Electives	6

**Year 3: 30 credit hours**

<b>Course No.</b>		<b>Credit Hours</b>
PERS 3100	Inclusive Physical Activity and Leisure	3
PERS 3340	Philosophy of Physical Activity and Leisure	3
PERS 3460	Sociology of Physical Activity and Leisure	3
REC 3200	Advanced Program Planning and Research	3
REC 4070	Community Development and the Leisure Delivery System	3
REC 4XXX	Advanced Recreation Electives*	6
	Electives	9

**Year 4: 30 credit hours**

<b>Course No.</b>		<b>Credit Hours</b>
PERS 4100	Current Issues	3
REC 4XXX	Advanced Recreation Electives*	6
	Electives	21**

\*Note: Advanced Recreation Electives offered change each year. Consult with an Academic Advisor for a list of approved courses that may fulfil this requirement.

\*\* PERS 4630 Supervised Fieldwork Experience is strongly recommended in Year 4 (12 credit hours)

\*\* A maximum of 18 credit hours of electives may be taken from outside the Faculty following Year 1.

**Degree Exit Requirement:** Current Basic Rescuer CPR and Emergency or Standard First Aid Certification

**4.5 Program Requirements for Students Admitted Prior to 2011,**

Faculty of Kinesiology and Recreation Management  
Students admitted before September 2011 will notice changes to course and program requirements. Students admitted prior to 2011 should contact the Undergraduate Program Administrator or Academic Advisor at the Faculty General Office for information on their specific degree requirements and courses needed for graduation.

To qualify for and declare the Minor in Recreation Studies, students must achieve a grade of "C" or better in the two introductory courses PERS 1300 and PERS 1400. A student must obtain approval and declare the minor with their home faculty for access into advanced REC courses.

**4.6 Minor in Recreation Studies (123),**

**Required Core Courses for the Minor in Recreation Studies (12 credit hours):**



- PERS 1300 Introduction to Leisure Travel (3 credit hours)
- PERS 1400 Concepts of Recreation and Leisure (3 credit hours)
- REC 2400 Management and Marketing of Leisure Services (3 credit hours)
- REC 3090 Sustainable Nature-Based Tourism (3 credit hours)

**Electives (Choose 6 credit hours from the following):**

- REC 4090 Sustainable Nature-Based Tourism Planning, Management and Research (3 credit hours)
- REC 4170 Sport Management (3 credit hours)
- REC 4250 Leisure and Aging (3 credit hours)
- REC 4310 Administration of Special Events (3 credit hours)
- REC 4350 Parks and Protected Areas Planning and Management (6 credit hours) (Summer Session Travel Study – Instructor Permission Required)
- PERS 4200 Special Topics (3 credit hours)

\*\*External students may complete up to 12 credit hours from the Recreation Studies Minor course list without declaring the minor. Students who declare the minor must take the minimum 18 credit hours but will be allowed to take up to 30 hours from the above courses.

**Note:** No minor in Physical Education or Kinesiology is offered.

**4.7 Interfaculty Option in Aging,**

The Option in Aging is offered by and in the following faculties: Arts, Human Ecology, Nursing, *Kinesiology and Recreation Management*, and Social Work.

Students in the Faculty of Kinesiology and Recreation Management can elect to complete the Option in Aging which consists of 18 credit hours of aging-related course-work. All Option in Aging students MUST complete the following two courses (6 credit hours):

- KIN 2610/ NURS 2610 Health and Physical Aspects of Aging (alternates between faculties)
- REC 2650/HMEC 2650/SWRK 2650 Social Aspects of Aging (alternates between faculties)

PLUS ONE OF (3 credit hours):

- REC 4250 Leisure and Aging (BRMCD students; not offered every year)
- KIN 4500 Physical Activity and Aging (BKin students)

AND ELECTIVES\* (9 credit hours):

- Approved age related courses from Kinesiology and Recreation Management or other faculties. A current list of applicable courses is available at the Faculty General Office.

In order to declare the Option in Aging, students must meet with an Academic Advisor once they have successfully completed the two compulsory courses of KIN 2610/ NURS 2610 and REC 2650/HMEC 2650/SWRK 2650.

Upon graduation, a student who has met all the requirements will have the concentration added to their transcript indicating they have completed the Option in Aging.

**4.8 Supervised Fieldwork Experience (PERS 4630),**

The supervised fieldwork experience is a professionally supervised experience that provides the student with the opportunity to apply knowledge gained in academic courses, and gives exposure to a workplace environment in a related field.

Students in the BKin and BRMCD programs are eligible to register for the 12 credit hour course provided they will complete 90 credit hours toward the degree and achieve a minimum Degree Grade Point Average of 2.5 or higher at the end of the third year of their degree. Student placements are scheduled for 13 weeks (working full-time) during the Fall Term (September through December). Information on the application process, deadlines and course details are available on the Faculty website and at the Faculty General Office.

**4.9 External Minors,**

Kinesiology and Recreation Management students may choose and declare an external minor offered by the Faculty of Arts, Clayton H. Riddell Faculty of Environment, Earth, and Resources, Faculty of Human Ecology, Faculty of Science, Faculty of Management, Marcel A. Desautels Faculty of Music, or School of Art. Completion of a declared minor is optional. See the applicable faculty and department chapters for the requirements of each minor. Minors must be declared with an Academic Advisor at the Faculty General Office in order to be approved and appear on a student's transcript.

In order to declare the Management Minor from the I. H. Asper School of Business, Faculty of Kinesiology and Recreation Management students must achieve a 3.0 DGPA (or higher). If a student has successfully completed 18 credit hours of course work from the Faculty of Management, and a 2.0 GPA in the Management course work by the time of graduation, the Minor in Management may also be declared upon completion of the degree program.



#### 4.10 Education Teachable Minors (BPE Program),

Students who intend to apply for admission to the Faculty of Education after completing their BPE degree should review the information in the current *Undergraduate Calendar* and consult with the Faculty of Education to ensure they are selecting an appropriate teachable minor and courses for their choice of the Early, Middle or Senior Years stream.

#### 4.11 Canadian Society for Exercise Physiology Certifications (CSEP: CPT & CEP),

The Canadian Society for Exercise Physiology Certified Exercise Physiologist (CSEP-CEP) is the highest level of professional certification for Kinesiology graduates in Canada. Through specific theory and practical based course work students are prepared for the national certification process. Further information can be found on the Faculty's website on how to become a Certified Personal Trainer (CSEP-CPT) or a Certified Exercise Physiologist (CSEP-CEP).

## SECTION 5: Registration Information for All Students

### Faculty Academic Advisors

If you require further information after reading the *Undergraduate Calendar*, contact the Kinesiology and Recreation Management academic advisors, 8:30 a.m. - 4:30 p.m. Monday - Friday.

Patti Dickieson, Academic Advisor  
103B Frank Kennedy Centre  
telephone (204) 474 9748  
Advising/Office Assistant  
102 Frank Kennedy Centre  
telephone (204) 474 9747

#### 5.1 Faculty Orientation Sessions,

All new students admitted to the Faculty must attend an Orientation session in order to be unblocked from registration. Dates will be provided with the letter of acceptance (normally in early July before registration initial access) and on the Faculty website.

At this session students will receive important information regarding their program, registration, and an orientation manual. Upon acceptance into the Faculty, students from outside of the province will be sent an orientation manual and should contact an Academic Advisor to discuss registration and other matters prior to registration initial access.

#### 5.2 Course Sequencing and Prerequisites,

Planning the sequence of required courses is essential. Several Faculty courses in all degrees require successful completion of another course in order to register. Some courses may only be offered once per year. Please check current catalogue and class schedules in your program to

ensure that you achieve what is necessary for efficient course enrolment in future terms.

#### 5.3 Repeating Courses,

When a course is repeated, the *most recent* attempt of that course will be included in the calculation of the Degree Grade Point Average; however, *both* grades will appear on the student academic history and official transcript. If a student wishes to repeat a course in which a grade has previously been assigned, they should contact an Academic Advisor for the necessary registration override prior to initial access.

Students will be permitted to repeat a failed Faculty-required course only once while in the program. Students who fail the same Faculty-required course twice will normally be required to withdraw from the program.

#### 5.4 Course Space Reserves,

Each degree program requires courses from outside faculties and departments. Specific sections in the following required courses have spaces reserved for students:

Recreation Management and Community Development:  
There are select reserved sections for STAT 1000.

Kinesiology/AT: There are select reserved sections for BIOL 2410, BIOL 2420, and STAT 1000.

Physical Education: There are select reserved sections for BIOL 1410 and BIOL 1412.

Students with the appropriate program code, major and/or minor will be able to access the reserve section of a required course. These courses can be identified in the Class Schedule as having section codes that appear as R01, R02...during registration initial access.

#### 5.5 Experiential Learning Courses (ELCs),

Experiential learning courses (ELCs) provide three credit hours of integrated theory and practice, and include applied activities that are designed to translate theoretical components to hands-on-learning in the gymnasium, dance studio, fitness studio, playing field, outdoor environment or clinic. Below is a list of Faculty of Kinesiology and Recreation Management experiential learning courses:

- KIN 2750 Athletic Therapy Skills
- KIN 3740 Resistance Training and Conditioning
- PHED 2400 Coaching Theory and Practice
- PHED 2402 Advanced Coaching Theory and Practice
- PHED 2710 Human Movement Principles
- PHED 2720 Developmental Games and Activities
- PHED 2730 Gymnastics, Dance and Rhythmic Activities
- PHED 2740 Fitness Theory and Practice
- PHED 3102 Aboriginal Song and Dance
- PHED 3710 Active Health and Human Potential



- PHED 3750 Lifestyle Activities
- PHED 3760 Diverse Populations Mentorship
- PHED 3770 Aboriginal Games and Activities
- PHED 4710 Outdoor Education
- REC 4720 Wilderness Adventures

### 5.6 Courses Requiring a Paid Facility Use Pass,

In some courses students will be required to purchase a facility use pass in order to gain access into and utilize various learning environments. Students should be prepared to have their pass within the first week of class in the applicable term. Students report to the Recreation Services Customer Service Desk in Frank Kennedy Centre and must present a current proof of registration. Recreation Services information and rates can be found at:

<http://umanitoba.ca/faculties/kinrec/bsal/programs>

The following courses require a facility use pass:

- KIN 3470 Exercise Physiology
- KIN 3740 Resistance Training and Conditioning (ELC)
- KIN 4460 Fitness Appraisal and Lifestyle Counselling
- KIN 4560 Advanced Fitness Appraisal and Lifestyle Counselling
- PHED 2400 Coaching Theory and Practice (ELC)
- PHED 2402 Advanced Coaching Theory and Practice (ELC)
- PHED 2710 Human Movement Principles (ELC)
- PHED 2720 Developmental Games and Activities (ELC)
- PHED 2730 Gymnastics, Dance and Rhythmic Activities (ELC)
- PHED 2740 Fitness Theory and Practice (ELC)
- PHED 3102 Aboriginal Song and Dance
- PHED 3750 Lifestyle Activities (ELC)
- PHED 3770 Aboriginal Games and Activities (ELC)
- REC 3200 Advanced Program Planning and Leadership

### 5.7 Course Field Work Fees,

PERS 1500 Foundations of Physical Education and Kinesiology: \$50.00

PHED 2740 Fitness Theory and Practice: \$10.00

PHED 3750 Lifestyle Activities: \$30.00

REC 3090 Sustainable Nature-Based Tourism: \$40.00

KIN 3320 Advanced Human Anatomy: \$55.00

PHED 3770 Aboriginal Games and Activities: \$25.00

PHED 3102 Aboriginal Song and Dance: \$25.00

REC 4090 Sustainable Nature-Based Planning, Management, and Research: \$40.00

REC 4720 Wilderness Adventures: \$50.00

### 5.8 Challenge for Credit,

PERS 1500 Foundations of Physical Education and Kinesiology is open to challenge for credit. Students must demonstrate their competence in this course before challenging (e.g., students with significant professional experience and training who may have the necessary knowledge; transfer students who may have completed several related courses at other institutions that are not directly equivalent to PERS 1500). The Academic Schedule in the front section of this Calendar contains the relevant registration deadline dates appropriate to challenge for credit.

### 5.9 Courses Available to Students in Other Faculties or Schools, Students from University 1 and other faculties or schools may register for the following courses:

- PERS 1200 Physical Activity, Health and Wellness
- PERS 1300 Introduction to Leisure Travel
- PERS 1400 Concepts of Recreation and Leisure
- PERS 1500 Foundations of Physical Education and Kinesiology
- KIN 2610 Health and Physical Aspects of Aging
- REC 2650 Social Aspects of Aging

### Students from other faculties or schools (not University 1) may register for the following courses:

- PERS 3170 Canadian Sport History
- KIN 3520 Coaching the High Performance Athlete A
- KIN 3530 Coaching the High Performance Athlete B



- REC 4250 Leisure and Aging

Students who have declared the Recreation Studies Minor may register for additional Recreation Studies courses – refer to requirements in Section 4.6.

Note: During the Summer Session, students from other faculties and schools may register for additional courses after the initial registration access week, provided that they have the pre-requisite courses. Check the course descriptions .

#### 5.10 Departmental Permission,

Students from other faculties who wish to register for courses other than those mentioned above may seek departmental permission by obtaining a form from the Faculty General Office (102 Frank Kennedy Centre) at the end of the initial registration access period of the applicable session.

### SECTION 6: Kinesiology -2000 Level

#### KIN 2320 Human Anatomy Cr.Hrs.3

(Lab Required) Structure of the skeletal, articular, and muscular systems of the human body. May not be held for credit with PHED 2320 (057.232), REHB 1480 (068.148), REHB 1490 (068.149), or REHB 1500 (068.150). Prerequisite: BIOL 1030 (C) or both BIOL 1000 (071.100) and BIOL 1010 (071.101) (C+ in each) or BIOL 1412 (ZOOL 1330 or 022.133) (C).

#### KIN 2330 Biomechanics Cr.Hrs.3

(Lab Required) The mechanical and anatomical analysis of human movement. May not hold for credit with PHED 2330 or PHED 2310 (057.231). Prerequisite: KIN 2320 or PHED 2320 (057.232) (C).

#### KIN 2540 Psychology of Sport and Physical Activity Cr.Hrs.3

This course will provide the student with an understanding of psychological variables affecting individuals within sporting and physical activity contexts. Among the topics to be explored will be motivation, arousal/anxiety, group dynamics and youth involvement in sport. May not hold for credit with PHED 2540. Prerequisite: PSYC 1200.

#### KIN 2610 Health and Physical Aspects of Aging Cr.Hrs.3

An introduction to health, well-being and aging. Emphasis on health as multidimensional including physical, social and mental health. Integration of theory and research in examining selected issues related to health and physical aspects of aging. This is an Option in Aging course and may not be held for credit with PHED 2610 (057.261) or NURS 2610 (049.261).

#### KIN 2750 Athletic Therapy Skills Cr.Hrs.3

This course will focus upon the theoretical study and practical application of massage therapy (basic and advanced) and sport specific taping, splinting and bracing techniques. The intent of this course is to help prepare students for their future in the profession of Athletic Therapy. May not hold for credit with PHED 2020 (057.202) or PHED 3180 (057.318). Open to Athletic Therapy students only.

### SECTION 6: Kinesiology -3000 Level

#### KIN 3160 Pathology and Sport Medicine Cr.Hrs.3

(Lab required) Analysis of types of injuries and emergency procedures, and practical experience in first aid, taping and wrapping, massage, and various preventive techniques. May not be held for credit with PHED 3160 or PHED 3060 (057.306). Prerequisite: KIN 2320 or PHED 2320 (057.232)(C).

#### KIN 3200 Basic Trauma and Life Support Cr.Hrs.3

(Lab required) Assessment and management of medical emergencies common to sports. Topics will include on-field primary and secondary surveys, airway management, assessment and management of head, spinal, chest, abdominal and extremity trauma. Open only to Athletic Therapy students or with permission of the instructor. May not hold for credit with PHED 3200 (057.320 or 057.319).

#### KIN 3320 Advanced Human Anatomy Cr.Hrs.3

(Lab Required) This course will concentrate on the structure and function of the human body's various tissues, organs and systems with particular emphasis upon basic histology, function and gross anatomy. This course will help prepare students who are interested in pursuing careers in Athletic Therapy and Kinesiology. Note: A fieldwork fee is attached to the course. Prerequisite: [KIN 2320 or PHED 2320 (057.232) (C)]

#### KIN 3330 Functional Assessment and Restoration A Cr.Hrs.3

(Lab required) General principles of assessment and restoration; assessment of acute and chronic musculo-skeletal injuries of the lower extremity; rehabilitation techniques to ensure full restoration of function. May not be held with KIN 3300 (PHED 3300 or 057.330). Prerequisite: KIN 3320 (C).

#### KIN 3332 Functional Assessment and Restoration B Cr.Hrs.3

Assessment of acute and chronic musculo-skeletal injuries of the upper extremity and spine; rehabilitation techniques to ensure full restoration of function. May not be held with KIN 3300. Prerequisite: KIN 3330 (C).

#### KIN 3400 Therapeutic Modalities Cr.Hrs.3

(Lab Required) This course will concentrate on the use of therapeutic modalities commonly utilized in the profession of Athletic Therapy. It will introduce the student to various thermal mechanical, and electromagnetic agents used for therapeutic purposes. May not hold for credit with PT 2720 (167.272). Prerequisite: [BIOL 2420] or ZOOL 2540 (22.254).

#### KIN 3450 Motor Learning Cr.Hrs.3

(Lab Required). Principles underlying human motor performance and motor skill learning. May not hold for credit with PHED 3450 (057.345).

#### KIN 3470 Exercise Physiology Cr.Hrs.3

(Lab required) Physiological and functional responses to acute and chronic exercise, focusing on the cardiovascular, respiratory and neuromuscular systems. May not be held for credit with PHED 3470 or PHED 3430 (057.343). Prerequisites: BIOL 2420 (ZOOL 2540 or 022.254) (D) or



BIOL 1412 (ZOO 1330 or 022.133) (C).

**KIN 3512** Principles of Fitness Training Cr.Hrs.3  
Theoretical concepts of designing programs employing the principles of overload and adaptation for all components of fitness for all age groups. May not hold for credit with PHED 3090 (057.309) or PHED 3512. Prerequisite: PHED 3430 (057.343) or KIN 3470 or PHED 3470 (C).

**KIN 3520** Coaching the High Performance Athlete A Cr.Hrs.3  
The development of advanced technical and theoretical expertise in coaching, including conflict management, psychology of performance, effective leadership, making ethical decisions, and practice planning. The course prepares students to be "Trained" in the Competition - Development level of the National Coaching Certification Program (NCCP). May not hold for credit with PHED 3520. Prerequisite: Faculty permission and 45 credit hours of university-level course work. The student must demonstrate a high level of proficiency as an athlete, coach or official in their sport.

**KIN 3530** Coaching the High Performance Athlete B Cr.Hrs.3  
The development of advanced technical and theoretical expertise in coaching, including prevention and recovery, leading drug free sport, developing athletic abilities, and designing a basic sport program. The course completes the fully "Trained" component in the Competition - Development level of the National Coaching Certification Program (NCCP). May not hold for credit with PHED 3530. Prerequisite: KIN 3520 or PHED 3520.

**KIN 3740** Resistance Training and Conditioning Cr.Hrs.3  
Development of theoretical and practical knowledge of strength training and conditioning for programming over the entire healthy population from inactive sedentary individuals to elite athletes. May not hold for credit with PHED 2620 (057.262 or PHED 3740). Prerequisite: KIN 2320 (PHED 2320 or 057.232) (C) and KIN 3470 (PHED 3470 or PHED 3430 or 057.343) (C). Co-requisite: KIN 3512 (KIN 3090, PHED 3512, PHED 3090 or 057.309) (C). Requires a paid facility use pass.

**KIN 3912** Athletic Therapy Practicum Cr.Hrs.4  
To provide clinical and on-field internship experiences on campus and in the community for prospective Athletic Therapy candidates. May not hold for credit with PHED 3910 (057.391), KIN 3910. Evaluated on a pass-fail basis. Prerequisite [KIN 2750 (C)] and [KIN 2320 (C) or equivalent] and [KIN 3200 (C)].

**KIN 3914** Clinical Block Placement Cr.Hrs.2  
Clinical internship experiences on campus and in the community for prospective Athletic Therapy candidates. Evaluated on a pass/fail basis. May not be held for credit with KIN 3910 or PHED 3910 (057.310). Prerequisites: KIN 3912.

## SECTION 6: Kinesiology -4000 Level

**KIN 4060** Drugs and Ergogenic Aids in Sport Cr.Hrs.3  
A multidisciplinary examination of drugs, hormones, dietary supplement and methods used by athletes in attempting to

enhance athletic performance. Ethical concerns and mechanisms of action will be examined for steroids, stimulants, masking agents, blood doping, and hormonal and dietary supplements among others. May not hold for credit with PHED 4060 (057.406). Recommended prerequisite BIOL 1412 (ZOO 1330 or 022.133) or BIOL 2420 (ZOO 2540 or 022.254).

**KIN 4160** Advanced Pathology and Sport Medicine Cr.Hrs.3  
Basic principles of pathology and clinical manifestations of cardiac respiratory, and neurologic disorders. Preventative measures, assessments and treatment methods employed in care of patients with these disorders will also be examined. May not be held for credit with PHED 4050 (057.405). Prerequisite: [KIN 3160 or PHED 3160 or PHED 3060 (057.306)] (C) and [KIN 3470 or PHED 3470 or PHED 3430 (057.343)] (C) and [KIN 3320 (C)]

**KIN 4330** Advanced Biomechanics Cr.Hrs.3  
(Lab required) A biomechanical analysis of the skills and techniques of the major sports, games, and exercises. May not be held for credit with PHED 4360 (057.436). Prerequisite: KIN 2330 or PHED 2330 or PHED 2310 (057.231) (C).

**KIN 4400** Therapeutic Exercise Rehabilitation Cr.Hrs.3  
This course will concentrate on therapeutic exercise for the upper and lower extremities, torso and spine. Content will focus upon using exercise and basic therapy techniques to restore function by addressing deficiencies in range of motion, flexibility, strength, power, endurance, proprioception, coordination, agility and speed. Prerequisite: [KIN 3740 or PHED 3740 (C)] and [KIN 3160 (C)].

**KIN 4460** Fitness Appraisal and Lifestyle Counselling Cr.Hrs.3  
Theoretical knowledge and practical training related to physical activity, fitness and lifestyle appraisal and counseling. Note: Prepares students to certify as "Certified Personal Trainer (CPT) (Canadian Society for Exercise Physiology)." B. Kin. Students who wish to prepare for the Certified Exercise Physiologist (CEP) Canadian Society for Exercise Physiology Certification should consult the Undergraduate Program Administrator for information. May not be held for credit with PHED 446 (057.446). Prerequisite: [KIN 3470 or equivalent (C)]. Pre or Co requisites: [PERS 1200 or equivalent (C)] and [KIN 3512 or equivalent (C)].

**KIN 4470** Advanced Exercise Physiology Cr.Hrs.3  
An advanced examination of the physiological factors that affect human performance during physical activity. This will include exposure to related research and the development of techniques for its critical assessment. May not hold for credit with PHED 4410 (057.441). Prerequisites: [KIN 3470 or PHED 3470 or PHED 3430 (057.343) (C)].

**KIN 4500** Physical Activity and Aging Cr.Hrs.3  
The study of the aging processes and the effects of exercise and lifestyle factors on the health and fitness of the aging adult. May not be held for credit with PHED 4500 (057.450). Prerequisite: [KIN 3512 (C) or equivalent] or permission of the Instructor.

**KIN 4540** Advanced Topics in Sport Psychology Cr.Hrs.3  
This course will provide the student with a deeper understanding of psychological variables affecting individuals within sport contexts, including an exploration of



various research methods and theories/research related to motivation, youth, and applied work in sport psychology. May not hold for credit with PHED 4540. Prerequisite: PHED 2540 or KIN 2540.

**KIN 4560** Advanced Fitness Appraisal and Lifestyle Counselling Cr.Hrs.3

Advanced theoretical knowledge and experiential learning related to physical activity, fitness and lifestyle assessment, counselling, and exercise prescription for apparently healthy and clinical populations. Prepares students for Canadian Society of Exercise Physiology "Certified Exercise Physiologist" (CSEP-CEP) exams. May not hold for credit with PHED 4350. Prerequisites: [KIN 4460 (C) or equivalent] and [KIN 3512 (C) or equivalent]. Requires a paid facility use pass.

**KIN 4910** Athletic Therapy Practicum Cr.Hrs.6

To provide clinical and on-field internship experiences on campus and in the community for prospective Athletic Therapy candidates. May not be held for credit with PHED 4910 (057.491). Evaluated pass/fail. Prerequisite: KIN 3914 (KIN 3910, PHED 3910 or 057.310) (C) and KIN 3400 (C) and KIN 3320 (C).

## SECTION 6: Phys Ed & Rec Studies General - 1000 Level

**PERS 1200** Physical Activity, Health and Wellness Cr.Hrs.3

An examination of the importance of physical activity for health and wellness, theories and determinants of health promoting behaviours, and strategies for promoting health behaviours. Examination of the benefits of physical activity for health and wellness, the present and recommended levels of physical activity, the factors influencing participation in physical activity, and individual organizational and national interventions for increasing physical activity. May not be held for credit with PHED 1200 (057.120)

**PERS 1300** Introduction to Leisure Travel Cr.Hrs.3

To provide an introduction to tourist behaviour and the tourism system through an overview of: why people travel; the components of tourism; the scope and organization of tourism in Canada; and the interrelationship between recreation and tourism. May not be held for credit with REC 1200 (123.120).

**PERS 1400** Concepts of Recreation and Leisure Cr.Hrs.3

The nature and scope of recreation and leisure, the past influences and implications for the future. An overview of the types and roles of various components of the leisure service delivery system. May not be held for credit with REC 1400 (123.140).

**PERS 1500** Foundations of Physical Education and Kinesiology Cr.Hrs.3

An introduction to physical education and kinesiology as a profession and a discipline, including an overview of sub-disciplines, resources, and careers; a personal physical assessment; and principles for achieving physical fitness. Note: A fieldwork fee is attached to the course. May not be held for credit with PHED 1500 (057.150).

## SECTION 6: Phys Ed & Rec Studies General - 2000 Level

**PERS 2000** Special Topics (Introductory) Cr.Hrs.3

An introductory examination of selected topics in the fields of kinesiology, physical education and recreation. Topics will vary depending on faculty expertise and student need.

**PERS 2100** Introduction to Professional Practice Cr.Hrs.3

An introduction to professional values and behaviours in the broad fields related to kinesiology, physical education, and recreation management including accountability, commitment, ethical decision making, interpersonal communication, respect for diversity, and service. Prerequisites: PERS 1200 (PHED 1200 or 057.120) (C) or PERS 1500 (PHED 1500 or 057.150) (C) and PERS 1400 (REC 1400 or 123.140) (C).

**PERS 2200** Program Planning Principles Cr.Hrs.3

While contexts in practice may vary, program planning is an essential competency for all professionals in recreation, kinesiology, and physical education. To ensure the requisite skill set is acquired, the emphasis in this course will be on principles and processes in effective program planning, implementation, and evaluation. May not hold for credit with PHED 3080 (057.308, REC 2530 or 123.253). Prerequisites: PERS 1200 (PHED 1200 or 057.120) (C) or PERS 1500 (PHED 1500 or 057.150) (C) and PERS 1400 (REC 1400 or 123.140) (C).

## SECTION 6: Phys Ed & Rec Studies General - 3000 Level

**PERS 3100** Inclusive Physical Activity and Leisure Cr.Hrs.3

This course introduces the foundations of inclusive physical activity and leisure and the application of this knowledge to individuals from diverse backgrounds and experiences with a focus on people with various forms of impairment. May not hold for credit with PHED 3390 (057.339) or REC 3060 (123.306). Prerequisite: [PERS 2100 (C)].

**PERS 3170** Canadian Sport History Cr.Hrs.3

This course will emphasize the rise of modern sport in Canada and will reflect on the ways in which social change has influenced sport and physical activity. This course provides an overview of issues and topics related to the development of modern sports in Canada. Using the concepts of class, gender, race and ethnic identity as interpretive tools, the course will examine: physical activities and games of First Nations; sport and recreation in new France and British North America; sports in post-Confederation Canada; and developments in the 20th and 21st centuries. May not be held for credit with KIN 3170 (PHED 3170, PHED 3070 or 057.307). Requires a paid facility use pass (day pass acceptable).

**PERS 3340** Philosophy of Physical Activity and Leisure Cr.Hrs.3

Issues in sport, physical education and recreation will be examined from a philosophical perspective. May not be held for credit with KIN 3340 (REC 3340, PHED 2340 or 057.234). Prerequisite: PERS 2100 (C).

**PERS 3350** Introduction to Research Cr.Hrs.3

Students will become familiar with the basic principles and methods of research in the biological, life and social sciences. Students will have the conceptual foundations and practical skills needed to locate, understand, and evaluate primary research publications. May not hold for credit with KIN 3350 (REC 3350, REC 2010 or 123.201). Prerequisite: STAT 1000 or STAT 1001 (005.100).

**PERS 3460** Sociology of Physical Activity and Leisure Cr.Hrs.3

This course examines sociological factors that influence and shape participation in the areas of physical activity, sport and leisure. The exploration of students' own experiences in this field is emphasized, using an analytical model examining experiences as they arise out of the interplay of social structure and individual agency. May not hold for credit with PHED 3460 (057.346).

**SECTION 6: Phys Ed & Rec Studies General - 4000 Level****PERS 4100** Current Issues Cr.Hrs.3

A capstone course examining current issues and strategies for addressing them in the broad fields related to kinesiology, recreation management, and physical education.

Prerequisite: Successful completion of 90 credit hours of course work in the BKin or the BRMCD degree programs.

**PERS 4200** Special Topics Cr.Hrs.3

A theoretical and practical examination of selected topics in the fields of recreation, leisure and kinesiology. Topics will vary depending on faculty expertise and student need.

Prerequisite: PERS 1400 (REC 1400 or 123.140)(C) or PERS 1500 (PHED 1500 or 057.150)(C) or PERS 1200 (PHED 1200 or 057.120) or departmental approval.

**PERS 4600** Directed Studies Cr.Hrs.3

Completion of an independent study or fieldwork experience, including a major written submission, approved by the department and under the direction of a faculty member.

**PERS 4630** Supervised Fieldwork Experience Cr.Hrs.12

The fieldwork practicum is a professionally supervised field experience that provides an opportunity to apply knowledge gained in academic courses, and exposure to new concepts of professional practice in the fields of physical activity, health and wellness, or leisure. Students are placed for a 13-week period of full-time work within a suitable agency. May not be held for credit with PHED 4620 (057.462) or REC 3080 (123.308) or REC 4630. Prerequisite: Successful completion of 90 credit hours of course work in the Bachelor of Kinesiology degree program and a minimum DGPA of 2.5.

**SECTION 6: Physical Education -2000 Level****PHED 2400** Coaching Theory and Practice Cr.Hrs.3

An introduction to theoretical and practical aspects of coaching at the community and school level, including the examination of topics of philosophical, psychological, ethical and technical significance. The course prepares students for certification from the national Coaching Certification Program (Competition A). May not hold for credit with KIN 2400, PHED 3720 or PHED 3050 (057.305). Requires a paid

facility use pass.

**PHED 2402** Advanced Coaching Theory and Practice Cr.Hrs.3

An analysis of the theoretical and practical aspects of coaching at elite levels, with a particular focus on topics of psychological and technical significance. An emphasis is placed on the sport psychology research literature. The course prepares students for certification from the National Coaching Certification Program (Competition B). May not be held for credit with KIN 2402 or KIN 3730 or PHED 3730. Requires a paid facility use pass. Prerequisite: KIN 2400 or PHED 2400 or PHED 3720 or KIN 3720 (C).

**PHED 2550** Growth and Motor Development Cr.Hrs.3

(Formerly 057.255) Detailed study of physical growth and motor development from conception to adolescence, with implications for physical activity programs.

**PHED 2710** Human Movement Principles Cr.Hrs.3

An introduction to the principles of inclusive physical education through the integration of theory, practice and guided selection pertaining to the development of fundamental movement skills and strategies applied to educational games, gymnastics, and dance. May not hold for credit with PHED 1420 (057.142 or 047.141). Requires a paid facility use pass.

**PHED 2720** Developmental Games and Activities Cr.Hrs.3

Practical and theoretical aspects of designing educational game experiences applicable to early through senior years physical education, to include the design, implementation, and assessment of safe and inclusive physical activities as well as planning, organizational and teaching strategies. Introduces students to Manitoba Curriculum Student Learning Outcomes in "Movement, Safety, Personal and Social Management". May not hold for credit with PHED 2650 (057.265). Requires a paid facility use pass. Prerequisite: PHED 2710 (C).

**PHED 2730** Gymnastics, Dance and Rhythmic Activities Cr.Hrs.3

Practical and theoretical aspects of designing gymnastics, dance and rhythmic activity experiences applicable to early through senior years physical education, to include the design, implementation, and assessment of safe and inclusive physical activities as well as planning, organizational and teaching strategies. Incorporates Manitoba Curriculum Student Learning Outcomes in "Movement" and "Safety." May not hold for credit with PHED 3410 (057.314). Requires a paid facility use pass. Prerequisite: PHED 2710 (C).

**PHED 2740** Fitness Theory and Practice Cr.Hrs.3

Integrates theory and practice necessary to design and lead safe and effective group fitness programs, following performance standards established by the National Fitness Leadership Alliance. Introduces students to Manitoba Curriculum Student Learning Outcomes in "Fitness Management," and prepares them for Manitoba Fitness Council Theory and Group Fitness Specialty exams. May not be held for credit with PHED 1640 (057.164) or PHED 2640 (057.264) or PHED 2630 (057.263) or KIN 2740. Note: A fieldwork fee is attached to the course. Prerequisite: KIN 2320 (PHED 2320 or 057.232)(C). Requires a paid facility use pass.

**SECTION 6: Physical Education -3000 Level****PHED 3102** Aboriginal Song and Dance Cr.Hrs.3

An introduction to a variety of traditional and culturally relevant Aboriginal songs and dances representative of Canada's Aboriginal peoples, including First Nations, Metis and Inuit, taught using western and traditional teaching styles with an emphasis on hands-on learning. A fieldwork fee is attached to the course.

**PHED 3360** Culturally Relevant Physical Education and Health Cr.Hrs.3

An investigation of physical health and education from a critical theorist perspective, that is, one that investigates the different relations of power and privilege (based on ability, gender, race, socio-economic class, sexuality ....) experienced within education experiences of young people from diverse backgrounds will be analyzed from a holistic perspective. May not hold for credit with PHED 3100 (057.310). Prerequisite: PHED 2720 (PHED 2650 or 057.265) (C).

**PHED 3710** Active Health and Human Potential Cr.Hrs.3

An examination of lifestyle behaviours which can enable or constrain human wellness and potential. By integrating theory with practice, current wellness models and motivational theories will guide strategies for wellness planning personal and professional practice. Introduces students to Manitoba Curriculum Student Learning Outcomes in "Personal and Social Management", and "Healthy Lifestyle Practices", as well as curricular connections for the teaching of "active health". May not be held for credit with PHED 3440 (057.344).

**PHED 3750** Lifestyles Activities Cr.Hrs.3

An introduction to the knowledge, skills, and attitudes that aid in the development of lifelong physically active and healthy lifestyles. May not hold for credit with KIN 3750 and or REC 3750. Requires a paid facility use pass.

**PHED 3760** Diverse Populations Mentorship Cr.Hrs.3

Practical and theoretical aspects of designing physical activity experiences for students from diverse population, including on site leadership opportunities in a multicultural school context. Evaluated pass/fail.

**PHED 3770** Aboriginal Games and Activities Cr.Hrs.3

This course will provide students with a unique opportunity to explore, in theory and practice, traditional and contemporary world views related to historical, cultural, and environmental approaches to Aboriginal games and activities. Requires a paid facility use pass. Evaluated pass/fail.

**SECTION 6: Physical Education -4000 Level****PHED 4710** Outdoor Education Cr.Hrs.3

To introduce the students to the basic outdoor skills associated with summer/winter backpacking/cross-country skiing/snow shoeing trips. Students will then learn to use a variety of outdoor settings for education opportunities on a variety of topics and disciplines. May not hold for credit with KIN 4710 (REC 4710). A fieldwork fee is attached to the course.

**SECTION 6: Recreation Studies -2000 Level****REC 2400** Management and Marketing of Leisure Services Cr.Hrs.3

Basic management, and marketing principles and practices and their applicability to delivery of leisure services. Topics include financial resources, budgeting, people-centred management, and marketing. Prerequisite: PERS 1400 (REC 1400 or 123.140) (C).

**REC 2650** The Social Aspects of Aging Cr.Hrs.3

(Formerly 123.265) An examination of the social aspects of aging. Emphasis on understanding the aging process as a life transition involving adaptation through interaction with social and physical environments. This is an Option in Aging course and may not be held for credit with IDES 2650 (051.265) or HMEC 2650 (028.265) or SWRK 2650 (047.265).

**SECTION 6: Recreation Studies -3000 Level****REC 3090** Sustainable Nature-Based Tourism Cr.Hrs.3

Analysis of the growth and development of sustainable nature-based tourism as a global and regional phenomenon. Particular emphasis will be placed upon the fundamental principles of sustainability, natural resource and visitor management for recreation, and the role of outdoor recreation and education in Sustainable Tourism Planning and Management. May not be held for credit with 123.309. Prerequisite: PERS 1300 (REC 1200 or 123.120) (C) and PERS 1400 (REC 1400 or 123.140) (C). Note: A fieldwork fee is attached to the course.

**REC 3200** Advanced Program Planning and Leadership Cr.Hrs.3

Consideration and application of program planning principles as they relate to specialized contexts and diverse populations. Foundations of leadership and interpersonal communication for effective and successful program implementation. May not hold for credit with REC 2540 (123.254, REC 3870 or 123.387). Prerequisite: PERS 2200 (PHED 3080, 057.308, REC 2530 or 123.253)(C). Requires a paid facility use pass.

**REC 3850** The Planning of Recreation Areas and Facilities Cr.Hrs.3

The process used to plan both recreational open spaces and facilities. Special consideration is given to the role of the recreation professional in relationship to other planners. May not be held for credit with 123.385. Prerequisite: PERS 1400 (REC 1400 or 123.140) (C) and PERS 2200 (PHED 3080, 057.308, REC 2530 or 123.253) (C).

**SECTION 6: Recreation Studies -4000 Level****REC 4060** Person Centred Leisure Education Cr.Hrs.3

A detailed examination of person-centred leisure education with an emphasis on both theoretical and practice models and their application to the recreation service delivery system. May not be held for credit with 123.406. Prerequisite: PERS 3100 (REC 3060, 123.306, PHED 3390 or 057.339) (C).

**REC 4070** Community Development and the Leisure Service Delivery System Cr.Hrs.3

(Formerly 123.407) The nature of community and the unique role that leisure service organizations play in the complex process of community development. Prerequisites: must have completed 70 percent of the core courses in Recreation Management and Community Development. May not be held for credit with 123.404. Prerequisites: [(PERS 2200 or REC 2530 (123.253) (C))] and [REC 2400 (C)].

**REC 4090** Sustainable Nature-Based Tourism Planning, Management and Research Cr.Hrs.3

(Formerly 123.409) Building upon the changes to REC 3090 this course examines planning and management frameworks as they relate to sustainable nature-based tourism. The course examines the expansion of tourism as a global phenomenon and considers sustainable nature-based tourism as a community development process. In addition the role and importance of research in informing the tourism planning and management decision making processes is examined. Prerequisites: [REC 3090 (123.309) or (123.330) (C)]. May not be held for credit with 123.430. Note: A fieldwork fee is attached to the course. Prerequisites: [(REC 3090 (123.309) or (123.330) (C))].

**REC 4120** Recreational Travel and Tourism Cr.Hrs.3

(Formerly 123.412) The purpose of this course is to provide students with a better understanding of the travel and tourism industry through an examination of its history, service systems and issues. Prerequisites: [PERS 1300 or REC 1200 (123.120) (C)].

**REC 4140** Marketing Recreation and Park Services Cr.Hrs.3

(Formerly 123.414) A review of the general principles of marketing and an introduction to strategies for their implementation in public sector and not-for-profit recreation agency programs and services. Prerequisites: [REC 2400 or REC 3860 (123.386) (C)] or [MKT 2210 (118.221) and [PERS 1400 or REC 1400 (123.140) (C)]. Pending Senate Approval

**REC 4150** Clinical Aspects of Therapeutic Recreation Cr.Hrs.3

(Formerly 123.415) An examination of the current principles of therapeutic recreation in relation to their practical application to individuals in clinical settings such as nursing homes, hospitals and other long-term care facilities. Prerequisite: [PERS 3100 or REC 3060 (123.306) (C)].

**REC 4170** Sport Management Cr.Hrs.3

An in-depth coverage of sport management, focusing on Canadian amateur sport systems (municipal, provincial, national) and professional sport organizations. May not be held for credit with 123.417. Prerequisite: REC 2400 (C).

**REC 4250** Leisure and Aging Cr.Hrs.3

The nature of the aging process and its impact on leisure behaviour. The factors influencing leisure among older adults, policy issues, and program and service methods and implications will be examined. This is an Option in Aging course. May not be held for credit with REC 4130 (123.413). Prerequisite: [PERS 3100 (C)] or [REC 2650] or permission of the instructor.

**REC 4350** Parks and Protected Areas Planning and Management: Field Studies Cr.Hrs.6

The course is taught in two segments, an on-campus component and field study component taking place in Banff National Park. The on-campus component examines the historical development of the concept of parks and protected areas, the role of interpretation, management and research in the parks and emerging issues in the management of parks and protected areas. In addition, during the on-campus component planning for the field will take place. The field segment will focus on a wide variety of management issues with particular attention to Banff National Park. Emerging issues and trends will be examined and past management responses evaluated. There will be opportunities for students to investigate specific management issues of interest to them and to participate in current research being conducted in the park. Prerequisite: Written permission of the instructor required. Offered with GEOG 4350.

**REC 4400** The Administration of Special Events Cr.Hrs.3

Advanced management principles and practices and their applicability to the delivery of leisure services. May not be held for credit with REC 4310 (123.431). Prerequisite: REC 2400 (REC 3860 or 123.386) (C).

**REC 4720** Wilderness Adventures Cr.Hrs.3

Student will learn how to plan and participate in one or more wilderness adventure activities such as canoe tripping, sailing, kayaking, climbing, winter camping, etc. Students will also concentrate on conducting these activities safely with clients. It is hoped that this experience will positively affect future life sport and recreation activities. A fieldwork fee is attached to the course. May not be held for credit with KIN 4720 or PHED 4720 Wilderness Adventures

**REC 4850** Advanced Planning of Recreation Areas and Facilities Cr.Hrs.3

Advanced planning considerations with opportunity for application of planning process theories. May not be held for credit with REC 4340 (123.434). Prerequisite: REC 3850 (123.385) (C).



## Faculty of Law

**Dean:** Lorna A. Turnbull

**Associate Dean(s):** Lisa K. Fainstein: Associate Dean (J.D. Program) - Jennifer Schulz: Associate Dean (Research and Graduate Studies)

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[lawadmissions@umanitoba.ca](mailto:lawadmissions@umanitoba.ca)

**Academic Staff:** Please refer to the Faculty website at

[umanitoba.ca/faculties/law](http://umanitoba.ca/faculties/law)

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### SECTION 1: Degree Programs Offered

Program/Degree	*Years to Complete	Total Credit Hours
Bachelor of Laws (J.D.)	5	157
Master of Laws (LL.M.)	6	161-163 and Thesis

\*This includes two years (60 credit hours) of study in an undergraduate program.

Equivalent academic courses completed at recognized universities elsewhere will be considered. For all admission requirements see: <http://law.robsonhall.ca/lb/admission-to-first-year>

\*The Master of Laws is a thesis-based program designed for completion in one year after the completion of a three year J.D. program. The program consists of participation in the Graduate Legal Theory Seminar, two additional courses and completion of a substantial thesis. Further details are available through the LL.M. website: [www.umanitoba.ca/law/newsite/research.php](http://www.umanitoba.ca/law/newsite/research.php). Applicants should also consult the Faculty of Graduate Studies website: [umanitoba.ca/graduate\\_studies/](http://umanitoba.ca/graduate_studies/).

## SECTION 2: The Profession and the Faculty of Law

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Robson Hall, Faculty of Law, offers a three year J.D. program that starts with the fundamental doctrinal courses that allow students to acquire a solid foundation in law. From the foundational courses, students can move into legal specialities of their choice, or choose to pursue an J.D.



concentrating on Aboriginal law, business law, or human rights. Clinical legal education has been a part of the J.D. program since the early 1970s and students develop lawyering skills under faculty guidance, expanding their perspectives and ethical understanding of the role of practising lawyers. Scholarship and research is built into the J.D. program so students have an opportunity to develop a critical understanding of law and its development.

### 2.1 The Study of Law,

Legal education in Canada is divided into two phases: the academic study of law at one of the university law schools and practical training under the auspices of a provincial law society for those who wish to be admitted to practise and called to a Bar. As there is a reciprocal recognition of university law degrees between the common law provinces (all provinces except Quebec), the academic study can be taken in any one of these provinces.

A sound education in law provides a good foundation for a great variety of careers. In the past most law graduates have entered the private practise of law to concentrate on various types of legal work: real estate transactions, commercial contracts, company law, family law, taxation, etc. Contrary to popular belief only a few lawyers concentrate on court work and even fewer specialize in criminal cases. While the tendency to specialize in the practise of law is becoming more prevalent, most lawyers continue to be general practitioners prepared to perform most types of legal work according to the needs of their clients.

Besides the private practice of law, law graduates can join the legal departments which many corporations find it expedient to maintain; others enter the employ of various government departments to serve in a variety of capacities. A few pursue nonlegal vocations in, business, journalism, social work, and law enforcement. At the University of Manitoba consideration is given to the fact that while most students take law to become practising lawyers, some are taking law as an additional discipline to enhance their opportunities in fields other than the practise of law; thus, while the emphasis is on the academic study of substantive law, the study is carried on in a practical context.

### 2.2 Clinical Learning,

The curriculum invites critical assessment of the role of law in society as well as the development of skills relevant to the practice of law. In addition to lectures and seminars, students are given an opportunity to develop, under supervision, some of the research, writing, and forensic skills which will prove useful in the practise of law. In first year, students are acquainted with the various resource materials available in a law library, and they follow a program designed to develop legal research and writing techniques. In second and third years, students participate in moot courts, fictitious trials and appeals, which provide practise in research, examination of witnesses, and courtroom argument. This advocacy training is just one element of the program at Robson Hall that contributes to the excellent reputation of our graduates. In third year students may choose from a range of Clinical Courses or may participate in national competitive moot competitions. Throughout their legal studies students may serve actual legal clients through volunteer work with the University Law Centre, Pro Bono Students, L. Kerry Vickar Business Law Clinic and The Legal Help Centre.

### 2.3 Research and Scholarly Writing,

Research and scholarly writing are integral elements of the mission of the University and the law school. Professors research, write and consult with the larger legal community in their particular area of expertise and students have similar opportunities. Each year students must take a perspective course which provides an opportunity to explore a particular area of law in depth. Perspective courses have limited enrolment and students must research and write a major paper.

### 2.4 Faculty of Law Centres of Excellence,

Robson Hall is home to two named research chairs. In 1999, the Faculty of Law established the Asper Chair of International Business and Trade Law. The Asper Chair sponsors a variety of research including bi-annual academic conferences in international business and trade law. An internship program allows up to four students a year to work with the Asper Chair and creates opportunities for students to advance their education, while gaining skills necessary to pursue careers in law or business with an international focus. Additionally, students involved in the Asper program have the opportunity to participate in international commercial dispute resolution competitions. The Marcel Desautels Chair in Private Enterprise and the Law has a mandate to conduct research and provide education on issues of specific interest to the privately held or family owned businesses. The Desautel Centre's focus is on the needs of closely held businesses. The Faculty of Law also operates the Kerry Vickar Small Business Law Clinic which is headed by a director who is assisted by volunteer mentors from the practising bar.

### 2.5 Student Organizations,

All Law students are members of the Manitoba Law Students' Association (MLSA), the student government. Student participation in Faculty governance takes place through the representation of elected members of the MLSA. In addition to the Manitoba Law Students Association there exists a diversity of student groups at Robson Hall. No matter what your interests, joining a student group can greatly enhance your law school experience by providing you with greater opportunities throughout the year to interact with the community and other students. Student groups include:

- Business Law Group
- Canada Law Games
- Citator
- Christian Legal Fellowship (CLF)
- Family Law Group
- Feminist Legal Forum
- Manitoba Aboriginal Law Students Association (MALSA)
- MBA Mentorship Program
- Mediators Beyond Borders
- Pro Bono Students Canada (PBSC)
- Outlaws
- Robson Hall Bilingual Students Association



## SECTION 3: Admission to the Faculty of Law

### Law

#### 3.1 Course Requirements for Admission to J.D. Program,

Robson Hall, Faculty of Law offers three First Year Admission categories:  
 Index Score (Regular) Category (50% GPA and 50% LSAT score)  
 Individual Consideration Category  
 Aboriginal Category  
 The minimum academic requirement for the Index score category is two (2) full years of university level courses including a mathematic requirement (equivalent of 60 credits). The JD. requirement fulfils the Universtiy's English requirement.  
 All applicants must write the Law School Admission Test (LSAT).  
 Download a copy of the [Applicant Information Bulletin](#).

## SECTION 4: Academic Regulations

All students are asked to note that some academic policies and regulations are under review and are subject to change. Please check the Web Calendar at [www.umanitoba.ca](http://www.umanitoba.ca) for updated information.

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. In addition, the Faculty of Law has regulations and requirements, published below, that apply specifically to its students.

#### 4.1 Residence requirements for the J.D. Degree,

To obtain the J.D. degree from the University of Manitoba, ordinarily a student must successfully complete two of the three years of the J.D. program at the University of Manitoba. The remaining year may be completed at another law school as approved by the Admissions Committee or the Dean's office.

#### 4.2 Licence to Practise Law,

Graduates who wish to practise must apply to the Law Society of the province in which they wish to practise. Law

#### 5.1 First Year

Each full-time student is required to take all of the following courses:

Course No.	<u>Doctrinal Courses</u> (Compulsory)	Credit Hours
LAW 1100	Contracts	6
LAW 1140	Criminal Law and Procedure	5
LAW 1460	Constitutional Law	5
LAW 1480	Torts and Compensation Systems	5
LAW 1500	Property	5
	<u>Clinical Course</u> (Compulsory)	
LAW 1540	Legal Methods	5
	<u>Perspective Course</u> (Compulsory)	
LAW 1530	Legal System	2
Total credit hours		33

societies generally require applicants to complete a bar admission course. The Law Society must be satisfied as to the good character and repute of its applicants, as well as their academic competence and qualifications. Inquiries with regard to the Province of Manitoba should be made to the Law Society of Manitoba.

#### 4.3 Regulations of the Faculty of Law,

Regulations of the Faculty of Law, as amended from time to time governing attendance, evaluation, prizes, and progression may be consulted at the Faculty's website ([www.umanitoba.ca/faculties/law](http://www.umanitoba.ca/faculties/law)).

#### 4.4 Miscellaneous Registration Matters,

The dean's office, with the recommendation of a special faculty-based committee if so requested, shall, subject to appeal to the Faculty Council, consider and determine all applications from students admitted to the faculty: 1) for a letter of permission, with conditions, to take part of their law studies for credit at the University of Manitoba, at another university; 2) for permission, with conditions, to defer their law studies for a period of one or more academic years after successfully completing first or second year, and to permit such students to re-register following such an absence; 3) for permission to withdraw before completing the academic year for which they are then registered and to permit, in the case of a student who withdraws from first year under exceptional circumstances, that student to re-register for a subsequent academic year as a supernumerary student, and in the case of a second or third year student, to permit such student to re-register for a subsequent academic year; in all cases with or without conditions; 4) for permission to switch from the full-time program to the half-time program and vice versa.

## SECTION 5: Program Requirements

### Program Requirements

#### SECTION 5: Program Requirements ,

This Section describes the program requirements that are in effect for the 2012-2013 academic year. However, prospective students should be aware that the Faculty of Law regularly reviews its curriculum to ensure that it continues to meet the current needs of our students.



### 5.2 Second Year Only

In **Second Year** each student must take:

	<u>Doctrinal Courses</u> (Compulsory)	
LAW 2600	Evidence	4
LAW 3530	Administrative Law	3
LAW 2670	Civil Procedure	2
LAW 2690	Corporations I	3
	<u>Clinical Courses</u> (Compulsory)	
LAW 2650	Introduction to Advocacy	3
LAW 2680	Legal Negotiation	3
Total Credit Hours		18

### 5.3 Second Year or Third Year

In **either Second Year or Third Year** each student must take:

	<u>Doctrinal Courses</u> (Compulsory)	
LAW 2490	Trusts	3
LAW 2640	Family Law	3
LAW 2700	Income Tax Law and Policy	3
Total Credit Hours		12
	<u>Perspective Courses</u> (One is Compulsory in each of second and third year; more can be taken)	
LAW 3012	International Business Law	3
LAW 3014	International Trade Law	3
LAW 3018	Human Rights Law	3
LAW 3070	Gender and the law	3
LAW 3090	Children and the Law	3
LAW 3162	Topics in Dispute Resolution	2
LAW 3190	Law and Literature	3
LAW 3230	Aboriginal Peoples and Land Claims	3
LAW 3310	Aboriginal Peoples and the Law	3
LAW 3370	The Legislative Process	3
LAW 3380	Issues in Law and Bio Ethics	3
LAW 3410	Canadian Legal History	3
LAW 3490	Research Paper	2
LAW 3550	Crime, Law and Society	3
LAW 3620	Comparative Law	3
LAW 3740	International Law	3
LAW 3760	Jurisprudence	2
LAW 3940	Canadian Charter of Rights and Freedoms	3
LAW 3980	Current Legal Problems B	3
	T08 Poverty Law	
	T13 Philanthropy Law	
	T14 Sentencing and Penal Policy	
	T16 Advanced Public Law	
	<u>Doctrinal Courses</u> (Optional)	
LAW 2400	Wills and Succession	3
LAW 2510	Problems in Contract and Tort	2
LAW 2530	Debtors' and Creditors' Rights	2
LAW 3010	Agency	2
LAW 3016	Corporations	3
	II	
LAW 3040	Sales and Consumer Law	2
LAW 3050	Commercial Law	3
LAW 3200	Immigration and Refugee Law	2
LAW 3210	Competitions A *	2
LAW 3220	Competitions B *	3
LAW 3260	Insurance Law	4
LAW 3330	Employment Law	3
LAW 3390	Securities Law	2
LAW 3480	Restitution	2
LAW 3500	Intellectual Property	4
LAW 3590	Charter Issues in Criminal Law	3



LAW 3600	Environmental Law	3
LAW 3610	Landlord and Tenant	2
LAW 3680	Land Titles	3
LAW 3690	Real Estate Transactions	3
LAW 3770	Labour-Management Relations	3
LAW 3822	Scholarly Publication*	2
LAW 3830	Legal Aid Clinic *	2
LAW 3850	Conflict of Laws	3
LAW 3880	Municipal and Planning Law	3
LAW 3970	Current Legal Problems A	
	L01 Advanced Issues in Intellectual Property	
		2
LAW 3980	Current Legal Problems B	
	T05 Copyright	
	T06 Law of Homicide	
	T09 Miscarriage of Justice	
	T10 Trade Marks and Patents	
	T15 Natural Resources	
	T 17 Internet and E-Commerce Law & Policy	

Each student in **Second Year** must take a minimum of 32 credit hours. The 32 credit hours are made up of mandatory, doctrinal and clinical courses plus electives comprising 14 to 16 credit hours. The 32 credit hours must include at least one perspective course.

Each student in **Third Year** must take a minimum of 32 credit hours. The 32 credit hours are comprised of LPPR and any second or third year compulsory doctrinal courses that have not been taken, plus electives comprising the additional credit hours. The 32 credit hours must include at least one perspective course. Note: LAW 3490 Research Paper is excluded if it has been taken in second year.

	Compulsory Course	
LAW 3930	The Legal Profession and Professional Responsibility	3
	The rest of a Third Year student's credit hours, comprising a minimum of 32 credit hours, shall be selected from additional Second or Third Year Courses, above, including at least one Perspective Course, plus any of the Doctrinal, and Clinical Courses, below:	
	<u>Clinical Courses</u> (Optional)	
LAW 3140	Clinical Administrative Law	4
LAW 3250	Current Legal Problems D	
	A01 Clinical Family Law	3
LAW 3300	Clinical Criminal Law	8
LAW 3340	Advanced Advocacy	3
LAW 3862	Business Transactions: The Art of the Deal	6
	<u>Doctrinal Courses</u> (Optional)	
LAW 3240	Current Legal Problems C	2
	A01 Court of Appeal Clerkship*	
LAW 3360	Advanced Legal Research	3
LAW 3450	Remedies	3
LAW 3510	Corporate Tax	3
LAW 3520	Taxation of Trusts & Estates	3
LAW 3980	Current Legal Problems B	
	T03 Advanced Family Law	3
xxx.xxx	Non-Law University Elective**	3

\* No more than three of these electives can be selected for credit. Students may take more than three of these electives but no credit will be awarded over the limit.

\*\*This option is available with permission of the Associate Dean. Note; Addition course fee will be assessed by the University.

#### Third Year

You may only take one of: Clinical Administrative Law, Advanced Advocacy, Intensive Criminal Law, Legal Help Centre Clinical or Clinical Family. If you take Art of the Deal



you may take Clinical Administrative Law, Advanced Advocacy, Intensive Criminal Law Legal Help Centre Clinical or Clinical Family. You may not take any other clinical course if you are taking Clinical Criminal Law.

## SECTION 6: Registration

First year students in the Faculty of Law are registered by the faculty after the middle of August. Returning Second and Third year students should register themselves through Aurora. It is the students responsibility to check their Aurora account to confirm: their registration, to verify that they meet Faculty of Law requirements for graduation and access fee statements. In the event that a student fails to properly select courses the dean's office may reject the courses selected by the student and assign courses to that student and such assignments shall ordinarily be final.

## SECTION 7: Law -1000 Level

### LAW 1100 Contracts Cr.Hrs.6

(Formerly 045.110) This course explores the basic principles of contract law. How is a contract formed? What is an offer? What constitutes acceptance? Are all promises enforceable as a contract? When should parties be allowed to avoid obligations? What happens if one party misrepresents the quality of subject matter of the contract? What if a party makes a mistake about what they buy or sell? What should happen if one party takes advantage of another for a better deal for themselves?

### LAW 1140 Criminal Law and Procedure Cr.Hrs.5

(Formerly 045.114) A general introduction to criminal law and procedure dealing with principles of criminal liability, common defenses to criminal charges, selected specific offences, and the basic procedures to be followed in the administration of criminal justice in Canada.

### LAW 1460 Constitutional Law Cr.Hrs.5

(Formerly 045.146) An examination of the legal problems arising from the nature of the Canadian political structure and, in particular, the distribution of legislative powers between the federal parliament and the provincial legislatures and an introduction to the impact of the Canadian Charter of Rights and Freedoms.

### LAW 1480 Torts and Compensation Systems Cr.Hrs.5

(Formerly 045.148) A general introduction to the law of torts and other compensation systems such as the Workers' Compensation and Criminal Injuries Compensation schemes.

### LAW 1500 Property Cr.Hrs.5

(Formerly 045.150) A general introduction to the principles of property with special emphasis on the principles of real property, their historical development and modern application.

### LAW 1530 Legal System Cr.Hrs.2

(Formerly 045.153) An introduction to the study of law including initial analysis of various aspects of legal history, the structure of the legal system, legal reasoning, statutory interpretation, dispute resolution and the role of the judiciary. This course is graded pass/fail.

### LAW 1540 Legal Methods Cr.Hrs.5

(Formerly 045.154) An introduction to legal research and

writing skills and oral advocacy. Grading: Pass/Fail

## SECTION 7: Law -2000 Level

### LAW 2400 Wills and Succession Cr.Hrs.3

(Formerly 045.240) The law of testate and intestate succession, Part IV of The Marital Property Act, and The Dependents' Relief Act.

### LAW 2490 Trusts Cr.Hrs.3

(Formerly 045.249) The nature and functions of modern inter vivos and testamentary trusts. The creation of express, private trusts, charitable trusts, resulting trusts, and constructive trusts. The administration of trusts, and real and personal remedies of beneficiaries under trusts.

### LAW 2510 Problems in Contract and Tort Cr.Hrs.2

(Formerly 045.251) A detailed study of significant topics in the area of tort and contract at an advanced level. Special attention will be paid to the inter-relationship of the two subject areas.

### LAW 2530 Debtors' and Creditors' Rights Cr.Hrs.2

(Formerly 045.253) Remedies of the unsecured creditor, enforcement of judgments, fraudulent conveyances and preferences, general assignments and bankruptcy. Mechanics' liens and special rights arising out of builders' and workers' legislation relating to real estate transactions.

### LAW 2600 Evidence Cr.Hrs.4

(Formerly 045.260) A study of the rules relating to the admissibility and weight of evidence in judicial proceedings.

### LAW 2640 Family Law Cr.Hrs.3

(Formerly 045.264) An overview of key legal issues regarding familial relationships and family breakdown in Canadian society. Topics include cohabitation, marriage, separation, divorce, child custody and access, spousal and child support and property division.

### LAW 2650 Introduction to Advocacy Cr.Hrs.3

(Formerly 045.265) A detailed study of the conduct of a case from its inception through to trial. The course requires that students prepare and conduct a trial. Grading: Pass/Fail.

### LAW 2670 Civil Procedure Cr.Hrs.2

(Formerly 045.267) An introduction to the rules of civil procedure.

### LAW 2680 Legal Negotiation Cr.Hrs.3

(Formerly 045.268) Most legal disputes settle before trial. This course examines how lawyers assist their clients through effective interviewing, counseling, strategic planning and negotiation as well as some of the mechanisms, both judicial and non-judicial, that facilitate pre-trial dispute settlement.

### LAW 2690 Corporations I Cr.Hrs.3

(Formerly 045.269) A study of the major legal, practical and policy issues arising out of the formation and operation of business organizations in Canada, with a particular focus on business corporations. Students will examine major principles of Canadian corporate law, including corporate personality, management power, majority rule and minority protection.



**LAW 2700** Income Tax Law and Policy Cr.Hrs.3  
(Formerly 045.270) The object of this course is to develop a working knowledge of the basic principles and rules of the income tax system as these apply to individuals. A parallel objective is the discovery of the major policy positions that inform the personal income tax system and the development of the ability to use tax policy analysis to evaluate advantages of, and problems with, the current system.

## SECTION 7: Law -3000 Level

**LAW 3010** Agency Cr.Hrs.2  
(Formerly 045.301) The course will cover the entire landscape of the law of agency, including the various kinds of authority, the duties of principals and agents, and the legal ramifications for each person when one person acts (purportedly) on behalf of another person.

**LAW 3012** International Business Law Cr.Hrs.3  
Explores the legal, practical and social realities of international business transactions.

**LAW 3014** International Trade Law Cr.Hrs.3  
The course will deal with the doctrine, practice and policy issues in international trade and business.

**LAW 3016** Corporations II Cr.Hrs.3  
An advanced study of corporations law from various theoretical and practical perspectives.

**LAW 3018** Human Rights Law Cr.Hrs.3  
Critical and constructive study, at an advanced level, of a significant major subject or set of topics in Human Rights Law.

**LAW 3020** Clinical Administrative Law Cr.Hrs.3  
The primary purpose of this course is to train students in lawyering skills. Students will be required to engage in classroom work and participate in simulated exercises. Emphasis will be given to the difference between board and court advocacy.

**LAW 3022** Insurance Law Cr.Hrs.3  
Introduction to the basic principles of insurance law. The fundamental elements to most types of policies will be examined with particular emphasis on property and liability insurance. The terms and provisions specific insurance policies and coverages such as automobile, property, liability policies will also be covered.

**LAW 3024** The Legal Profession and Professional Responsibility Cr.Hrs.3  
A general introduction to the problems of professional responsibility and the ethics of lawyers individually, as well as the legal profession collectively. Topics dealt with will include ethical problems of the lawyer in the role of the advocate and in the role of counsellor (confidentiality, conflict of interest, etc.); professional responsibility in the delivery of legal service (competency, fee determination, specialization, regulation etc) and the legal profession and the public interest (governance of profession, discipline, professional liability etc) These problems are to be studied by the critical examination of case law, codes, canons, and other published materials, by classroom discussion and debate on problems; and by workshops and panels which involve

practising lawyers.

**LAW 3026** Trademarks and Patents Cr.Hrs.3  
An in-depth examination of the law of Trade-marks and Patents, including underlying policy objectives.

**LAW 3028** Copyright Law Cr.Hrs.3  
An in-depth examination of the law of Copyright.

**LAW 3040** Sales and Consumer Law Cr.Hrs.2  
(Formerly 045.304) The Sale of Goods Act and related statutes including a study of the duties and remedies of the parties and questions of title. Manitoba Consumer Protection Law in the area of sales and credit.

**LAW 3050** Commercial Law Cr.Hrs.3  
(Formerly 045.305) A study of secured transactions and negotiable instruments.

**LAW 3070** Gender and the Law Cr.Hrs.3  
(Formerly 045.307) An exploration of ideas about gender differentiation in law, the legal system, legal education and the legal profession. It will offer an introduction to the feminist critique of law and feminist theories about sexual equality and discrimination.

**LAW 3090** Children and the Law Cr.Hrs.3  
(Formerly 045.309) Relationships between child, family, state and law are examined within an interdisciplinary context, focusing on such issues as rights theories and the public/private distinction; regulation of young offenders, child protection and state intervention; and child victims in the courts.

**LAW 3140** Clinical Administrative Law Cr.Hrs.4  
(Formerly 045.314) The primary purpose of this course is to train students in lawyering skills. Students will be required to engage in classroom work and participate in simulated exercises. Emphasis will be given to the difference between board and court advocacy. Grading:Pass/Fail.

**LAW 3162** Topics in Dispute Resolution Cr.Hrs.2  
This course offers a detailed exploration of the theory and practice of dispute resolution focusing on the various approaches, private and court-connected, currently used to resolve conflict. In critically examining selected alternative dispute resolution mechanisms, the course exposes students to issues such as rights-based and interest-based dispute resolution, power, gender and culture in ADR processes and the functions, and skills required of, third party interveners. May not be held with the former LAW 3160 (045.316).

**LAW 3190** Law and Literature Cr.Hrs.3  
(Formerly 045.319) Law and Literature is the legal analysis of literary texts and the literary analysis of legal texts. By introducing images of law and social control found in literature and popular culture, and exploring legal language and the construction of narrative, the course invites speculation about the nature and impact of law.

**LAW 3200** Immigration and Refugee Law Cr.Hrs.2  
(Formerly 045.320) An explanation of immigration and refugee law through a study of a representative section of problems.

**LAW 3210** Competitions A Cr.Hrs.2

(Formerly 045.321) Credit for selected students who satisfactorily participate in those academic competitions approved by Faculty Council. Grading: Pass/Fail.

**LAW 3220** Competitions B Cr.Hrs.3

(Formerly 045.322) Credit for selected students who satisfactorily participate in those academic competitions approved by Faculty Council. Grading: Pass/Fail.

**LAW 3230** Aboriginal Peoples and Land Claims Cr.Hrs.3

(Formerly 045.323) The course shall provide an overview of land claims and treaty land entitlement policies in Canada and their impact upon land claims by Aboriginal communities.

**LAW 3240** Current Legal Problems C Cr.Hrs.2

(Formerly 045.324) Critical and constructive study, at an advanced level, of a significant major subject or set of topics. Grading: Pass/Fail.

**LAW 3250** Current Legal Problems D Cr.Hrs.3

(Formerly 045.325) Critical and constructive study, at an advanced level, of a significant major subject or set of topics. Grading: Pass/Fail.

**LAW 3260** Insurance Law Cr.Hrs.4

(Formerly 045.326) A general introduction to the basic principles of insurance law. The fundamental elements common to most types of policies will be examined with particular emphasis on property and liability insurance. The terms and provisions of specific insurance policies and coverages such as automobile, property, liability policies will also be covered.

**LAW 3300** Clinical Criminal Law Cr.Hrs.8

(Formerly 045.330) The primary purpose of this offering is to train students in lawyering skills in the criminal law area. To this end instruction is given on an intensive basis in small groups. Students may be required to engage in classroom work; to participate in various forms of simulation exercises and to conduct actual client based cases under the supervision of the instructor. Particular emphasis will be given to questions of professional responsibility and ethics. Grading: Pass/Fail.

**LAW 3310** Aboriginal Peoples and the Law Cr.Hrs.3

(Formerly 045.331) A study of the laws relating to Aboriginal Peoples in North America from the colonial period to the present. Special emphasis will be given to aboriginal rights, hunting and fishing rights, the legal aspects of Indian Treaties and the Indian Act. A more general treatment will be given to a study of Aboriginal Peoples' relationship to civil and criminal law in modern Canadian society.

**LAW 3330** Employment Law Cr.Hrs.3

(Formerly 045.333) A detailed study of employment law including employment principles, constructive and wrongful dismissal, just cause, human rights and remedies.

**LAW 3340** Advanced Advocacy Cr.Hrs.3

(Formerly 045.334) Advanced topics in trial presentation, procedure and evidence with concentration on jury trials.

**LAW 3360** Advanced Legal Research Cr.Hrs.3

(Formerly 045.336) This course will provide students with the wherewithal to conduct legal research across a number of

jurisdictions using both print and digital formats. Students are evaluated on a number of research exercises, a midterm examination, a major research pathfinder and a presentation of research results.

**LAW 3370** The Legislative Process Cr.Hrs.3

(Formerly 045.337) A study of how statutes and regulations are made in the Province of Manitoba, and how lawyers can effectively represent their clients in the context of lawmaking by politicians, civil servants and regulators.

**LAW 3380** Issues in Law and Bio Ethics Cr.Hrs.3

(Formerly 045.338) The course deals with the legal aspects of prevention, creation, alteration, maintenance and termination of life through medical and other scientific means.

**LAW 3390** Securities Law Cr.Hrs.2

(Formerly 045.339) A study of the basic concepts and application of the securities regulatory system in Canada.

**LAW 3410** Canadian Legal History Cr.Hrs.3

(Formerly 045.341) The historical background of the Canadian legal system.

**LAW 3450** Remedies Cr.Hrs.3

(Formerly 045.345) A study of the law relating to damages, specific performance, injunctions, and other equitable remedies.

**LAW 3480** Restitution Cr.Hrs.2

(Formerly 045.348) Principles and remedies of the common law and equity capable of preventing unjust enrichment; quasi-contract and constructive trusts.

**LAW 3490** Research Paper Cr.Hrs.2

(Formerly 045.349) Details in each case to be worked out with the associate dean.

**LAW 3500** Intellectual Property Cr.Hrs.4

(Formerly 045.350) A study of the law of, and issues related to, the major areas of intellectual property, including trademarks, copyright and patent, as well as ancillary doctrines including some or all of industrial design, trade secrets, appropriation of personality and plant breeders' rights.

**LAW 3510** Corporate Taxation Cr.Hrs.3

(Formerly 045.351) A study of federal tax laws as they affect corporation income, as well as a discussion of the effects of income tax laws on corporate and other commercial planning.

**LAW 3520** Taxation of Trusts and Estates Cr.Hrs.3

(Formerly 045.352) A study of taxation principles as they relate to partnership and trust income and estate planning.

**LAW 3530** Administrative Law Cr.Hrs.3

(Formerly 045.353) An introduction to administrative law generally, with concentration on the judicial review of the exercise of statutory authority by administrative entities.

**LAW 3550** Crime, Law and Society Cr.Hrs.3

(Formerly 045.355) A study of various social problems in legal and sociological perspectives with emphasis on criminal law and the administration of criminal justice. Topics may include police discretion, preventive detention, plea



bargaining, sentencing theory and practise in correction, drug abuse and the mentally ill.

**LAW 3590** Charter Issues in Criminal Law Cr.Hrs.3  
(Formerly 045.359) The rules of Criminal Procedure and principles underlying and unifying such rules with a particular emphasis on the effect of the Charter of Rights and Freedoms on those rules.

**LAW 3600** Environmental Law Cr.Hrs.3  
(Formerly 045.360) The balance between technical development and the life-support capacity of the environment. The acquisition and nature of private rights in natural resources and their control by legislation and common law. Remedies for environmental degradation. Constitutional and international legal issues.

**LAW 3620** Comparative Law Cr.Hrs.3  
(Formerly 045.362) An introduction to civil law; a brief historical survey, codification, judicial philosophy, detailed study of selected comparative law topics in tort and contract with special reference to the Civil Code of the Province of Quebec. An introduction to Soviet law, detailed study of selected topics in Soviet law.

**LAW 3680** Land Titles Cr.Hrs.3  
(Formerly 045.368) The law relating to the registration of assurances and titles.

**LAW 3690** Real Estate Transactions Cr.Hrs.3  
(Formerly 045.369) The law relating to vendors and purchasers of land and to mortgages and other security on land.

**LAW 3740** International Law Cr.Hrs.3  
(Formerly 045.374) An introduction to the nature, sources, and some of the fundamental concepts of international law.

**LAW 3760** Jurisprudence Cr.Hrs.2  
(Formerly 045.376) This seminar will cover all the major "schools" of jurisprudential theory, with attention paid to particular areas of legal theory and debate, to the nature and function of law, its relation to morality, and to the analysis of rights and other legal relationships. Efforts will be made to relate these areas of debate to legal issues of current interest and practicality.

**LAW 3770** Labour-Management Relations Cr.Hrs.3  
(Formerly 045.377) A survey of the development of trade unions; their present status under both federal and provincial legislation regarding the right of association, collective bargaining, and the settlement of disputes.

**LAW 3820** Manitoba Law Journal Cr.Hrs.2  
(Formerly 045.382) The editor of the Manitoba Law Journal who successfully completes his/her term of office, and all other editors and journal staff who in addition to successfully completing their terms of office satisfactorily complete a written requirement, may opt for the Manitoba Law Journal credit. Grading: Pass/Fail.

**LAW 3822** Scholarly Publications Cr.Hrs.2  
Senior editors of scholarly publications approved by the Academic Affairs Committee who successfully complete their terms of office and any writing requirements. Grading: Pass/Fail.

**LAW 3830** Legal Aid Clinic Cr.Hrs.2  
(Formerly 045.383) Students who are selected to act as student supervisors at the University Law Centre during the summer and who continue to actively serve the University Law Centre during their third year may, by successfully completing a written assignment approved by a faculty supervisor, opt for the Legal Aid Clinic. Grading: Pass/Fail.

**LAW 3850** Conflict of Laws Cr.Hrs.3  
(Formerly 045.385) Sometimes called private international law, it has to do with choosing what place to sue, what law applies when the law of more than one place might apply, and with the enforceability of judgments through foreign courts.

**LAW 3862** Business Transactions: The Art of the Deal Cr.Hrs.6  
A study, involving practical exercises of certain aspects of solicitors' work, including interviewing, negotiating, counseling and memo writing.

**LAW 3880** Municipal and Planning Law Cr.Hrs.3  
(Formerly 045.388) A general course in municipal law, including important aspects of land-use control and planning law. Although the course deals generally with the nature, structure, functions, and powers of the various units comprising the local level of government, the focus is primarily on municipal corporations. Topics covered include assessment and taxation, land-use planning and control, tort liability, judicial review of bylaws, qualification and accountability of councillors, and the law relating to expropriation, as well as some discussion of contemporary urban problems..

**LAW 3930** The Legal Profession and Professional Responsibility Cr.Hrs.3  
(Formerly 045.393) A general introduction to the problems of professional responsibility and the ethics of lawyers individually, as well as the legal profession collectively. Topics dealt with will include ethical problems of the lawyer in the role of advocate and in the role of counsellor (confidentiality, conflict of interest, etc.); professional responsibility in the delivery of legal service (competency, fee determination, specialization regulation, etc.) and the legal profession and the public interest (government of profession, discipline, professional liability, etc.). These problems are to be studied by the critical examination of case law, codes and canons, and other published materials; by classroom discussion and debate on problems; and by workshops and panels which involve practising lawyers.

**LAW 3940** Canadian Charter of Rights and Freedoms Cr.Hrs.3  
(Formerly 045.394) An in-depth study of the legal, philosophical and historical foundations of the Canadian Charter of Rights and Freedoms. Included is a study of both the American and European experience with Charters of Rights as well as Canadian case law.

**LAW 3970** Current Legal Problems A Cr.Hrs.2  
(Formerly 045.397) Critical and constructive study, at an advanced level, of a significant major subject or set of topics.

**LAW 3980** Current Legal Problems B Cr.Hrs.3  
(Formerly 045.398) Critical and constructive study, at an advanced level, of a significant major subject or set of topics.

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ACADEMIC CALENDAR  
2012-2013 ▶



UNIVERSITY  
OF MANITOBA



## Faculty of Management/I.H. Asper School of Business

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Includes subjects: ENTR (Entrepreneurship/Small Business),

**SECTION 1: Degree Programs Offered**

**1.1 Degree Programs Offered,**

Degree	Years to Complete	Total Credit Hours
Bachelor of Commerce Honours	4	120
Bachelor of Commerce Honours (Co-operative Education Option)	4.33+	120

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

**1.2 Available Majors and Option,**

The following Majors may be used to complete the Bachelor of Commerce (Honours) program:

Operational Research/Operations Management

A detailed explanation of the requirements for each major may be found in Section 4.2.

Aboriginal Business Studies

Accounting

Actuarial Mathematics

The Co-operative Education Option is the only option that may be used to complete the Bachelor of Commerce (Honours) program. Complete details on the requirements for the Co-operative Education Option are found in Section 4.3.

Entrepreneurship/Small Business

Finance

**1.3 Accreditation,**

In 2009, the Asper School of Business received re-accreditation from AACSB International - The Association to Advance Collegiate Schools of Business.

Generalist

In 2009, the Asper School of Business received accreditation from the SOA – Society of Actuaries.

Human Resources Management/Industrial Relations

International Business

Logistics and Supply Chain Management

These prestigious recognitions affirm the faculty's commitment to the continuous improvement of its courses and programs. The mission of the Asper School of Business is to provide management education in Manitoba by creating and disseminating leading edge knowledge and developing skills relevant to current and future managers in organizations operating in a global environment.

Management Information Systems

Management of Organizations

Marketing

Undergraduate Calendar



## SECTION 2: Admission Requirements

### 2.1 Admission Requirements from High School and Previous Post-Secondary Institutions,

The following is a summary of the admission requirements for the Bachelor of Commerce (Honours.). Equivalent courses completed at other universities will be considered for admission and transfer credit only if the courses have been taken within the last 10 years. All admission requirements, as well as application deadline dates and forms, are included in the Applicant Information Bulletin that is available from the [Admissions Office](#), 424 University Centre. This information is also posted on the University of Manitoba's website.

#### Direct Entry from High School

To be eligible to apply high school students must have:

1. Manitoba high school graduation, with five full credits at the Grade 12 level, in courses designated S (Specialized), G (General), or U (Dual Credit –University), with
2. A minimum 85% average over three courses: Pre-Calculus Math 40S or Applied Math 40S (Recommended Pre-Calculus 40S), English 40S, and one other 40S/U course, and
3. A minimum 60% in each of the three courses noted in point 2 above, and
4. Applicants may require a higher average than stipulated in point 2 to be successful in the annual competition for admission.

See Applicant Bulletin for complete details.

#### Track 1 Transfer Students

The following is a summary of the admission requirements for the Bachelor of Commerce (Honours.) for Track 1 transfer students. Equivalent courses completed at other universities will be considered for admission and transfer credit only if the courses have been taken within the last 10 years. All admission requirements, as well as application deadline dates and forms, are included in the Applicant Information Bulletin that is available from the Admissions Office, 424 University Centre. This information is also posted on the University of Manitoba's website.

#### Requirements (for Track 1 Transfer students)

- Economics ECON 1200 (6) or [ECON 1010 (3) and ECON 1020 (3)] (6)
- 6 credit hours from: Anthropology, History, Mathematics, Philosophy, Political Studies, Psychology, or Sociology (6)\*
- Mathematics MATH 1520 or MATH 1500 (3)
- Statistics STAT 1000 (3)
- A 3 credit hour Written English ("W") course from a specific discipline (ARTS 1110, GMGT 1010 and GMGT 2010 are

- not considered to be from a specific discipline) (3)
- 3 credit hours of electives (3) \*\*

Minimum 24 credit hours completed by April 30. Although 24 credit hours is the minimum requirement for admission, a full year course load would require 30 credit hours; therefore, students only taking 24 credit hours for admission will need to pick up an extra 6 credit hours of course work once in the Asper School of Business.

If students want to complete 30 credit hours in Year 1, students are recommended to take 6 credit hours from this suggested list of recommended courses: GMGT 1010 plus one of GMGT 2060, GMGT 2070 or MKT 2210.

\* Courses chosen for this requirement must be independent from courses taken to fulfill other degree requirements.

\*\*Critical Thinking (Philosophy) PHIL 1290 is a preferred elective choice\*\*

Students must achieve a minimum grade of "C" on each course listed above. Admission in this category is competitive.

See Applicant Bulletin for complete details.

#### Track 2 Transfer Students

Applicants who are missing one or more of the Track 1/Foundation course requirements may apply under Track 2 provided they have met the following criteria: completed a minimum of 24 credit hours; achieved a minimum admission GPA of 3.1; and achieved a minimum grade of "C" on each course comprising the 24 credit hours. Track 2 applicants are encouraged to complete all outstanding Track 1/Foundation required courses during their first year after admission to the Asper School of Business.

Minimum 24 credit hours completed by April 30. Although 24 credit hours is the minimum requirement for admission, a full year course load would require 30 credit hours; therefore, students only taking 24 credit hours for admission will need to pick up an extra 6 credit hours of course work once in the Asper School of Business.

\*Students must achieve a minimum grade of "C" on each course listed above. Admission in this category is competitive.

See Applicant Bulletin for complete details.

#### Priority for Admission

Admission to the Asper School of Business is limited to an annual quota. The quota will be filled by selecting students from a rank-ordered list of applicants in the following order:

For September 2011:



*First Priority* –Direct Entry from High School applicants.

*Second Priority* - Track 1 applicants with an AGPA of 2.60 or greater in descending order of AGPA. Thirty spaces are reserved for the Track 2 applicants with an AGPA of 3.10 or higher in descending order of AGPA.

*Third Priority* - Track 2 applicants (who are not already admitted under the Second Priority) with an AGPA of 3.10 or greater in descending order of AGPA.

*Fourth Priority* - Track 1 applicants with an AGPA of 2.00 - 2.59 in descending order of AGPA.

Both Track 1 applicants and Track 2 applicants may require an AGPA well in excess of the minimum to be successful in the annual competition for admission.

#### **Other requirements**

High school prerequisite: Grade 12 Pre-Calculus Mathematics 40S (or equivalent, with a minimum 60 %)

The Written English and Mathematics requirements are satisfied by Track 1/Foundation courses.

Minimum AGPA for consideration: 2.0 for Track 1 applicants; 3.1 for Track 2 applicants.

Admission to the Asper School of Business is limited to an annual quota and is competitive.

The Bachelor of Commerce (Honours) program does not have a Mature Student Category for admission.

All students seeking admission to the Bachelor of Commerce (Honours) program must first complete either the Direct Entry, Track 1 or Track 2 requirements.

All students planning to enter the Bachelor of Commerce (Honours) program must obtain a minimum of 60 per cent in Grade 12 Pre-Calculus Mathematics 40S (or equivalent) in order to complete all degree requirements.

The Bachelor of Commerce also has a Special Consideration Category.

See Applicant Bulletin for complete details.

#### **Advance Standing: Transfer and Second Degree Students**

Students who do not meet the eligibility requirements for admission after their first year of University can spend another year (or more) in another faculty, complete the eligibility requirements, and then apply (or re-apply) for admission. Students who complete additional course credits beyond the Track 1/Foundation or Track 2 requirements are

eligible to receive applicable advance standing upon admission to the Asper School of Business.

The following regulations apply to students who must (or choose to) take more than one year to qualify for admission to the Asper School of Business.

#### **All transfer and second degree students will be required to:**

Meet the admission requirements of Track 1 or Track 2 in the year of application.

Complete all 120 credit hours required in the Bachelor of Commerce (Honours) program, including the 24 credit hours that comprise the specific Track 1/Foundation course requirements, the Core requirements, the course requirements for one Major, Business Options, and Elective courses. After admission to the Asper School, students in Track 2 must complete all outstanding courses listed in the Track 1/Foundation course requirements and achieve a minimum grade of "C" in each course.

Students who are admitted to the Asper School of Business who have completed more than the minimum 24 credit hours requirement of Track 1/Foundation course or Track 2 may be eligible to receive transfer credit for the additional work completed, provided the additional course work is creditable toward the degree requirements of the Bachelor of Commerce (Honours).

Students who are admitted to the Asper School of Business following the completion of another degree program are eligible to receive a maximum of 60 hours of transfer credit for applicable courses completed as part of their first degree. Students who, within their first degree, have more than 60 hours of transferable credits would be required to take substitute courses for credits in excess of the 60 hour limit on transfer.

Students who have a degree and in addition have completed further courses at the University of Manitoba which are applicable to the B. Comm.(Hons.) program that were not used for credit toward their first degree may receive additional transfer credit for that work.

Equivalent courses completed at other universities will be considered for admission and transfer credit only if the courses have been taken within the last 10 years.

Students are encouraged to contact a Undergraduate Program Advisor in the Undergraduate Program Office for information on how to optimize their transfer credit and advance standing.

See Applicant Bulletin for detailed information on admission requirements.

#### **2.2 Admission Requirements from Joint Programs with Manitoba Colleges,**



The Asper School of Business has established Joint Programs with Red River College, Assiniboine Community College, University College of the North, and école technique et professionnelle. Graduates of the Business Administration Diploma (University Stream) from these four colleges are eligible to apply directly to the Asper School of Business.

Successful applicants will receive block transfer credit for their courses completed in the Business Administration Diploma and are required to complete specified courses at the University of Manitoba in order to receive the Bachelor of Commerce (Honours) degree. Requirements for the Joint Programs are listed in [Section 4](#).

Admission to each Joint Program is limited to an annual quota and is competitive. Students must achieve a minimum grade point average of 3.00 on their Business Administration Diploma (University Stream) to be eligible for admission. Students must have graduated from the Diploma program within the last 5 years to be eligible for admission. Applicants are ranked in descending order of their grade point average and are admitted until the annual quota is met.

See Applicant Bulletin for detailed information on admission requirements.

### SECTION 3: Academic Regulations

All students are asked to note that some academic policies and regulations are under review and are subject to change. Please check the Undergraduate Program Office for updated information.

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. In addition, the Asper School of Business has regulations and requirements, published below, which apply specifically to its students and to non-business students taking business courses.

#### 3.1 Changes in Program Requirements,

Once students are admitted to the Asper School and have successfully completed any portion of the program, they will not be required to meet new course requirements subsequently stipulated for that portion of the program, whether the requirements be for the faculty or for an individual major.

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

#### 3.2 Evening Program,

The Asper School of Business does not offer an evening program. Although a limited number of business courses may be offered in evening time slots during both the Regular and Summer Sessions, it is not possible to complete all the

course requirements of the Bachelor of Commerce (Honours) program without recourse to daytime attendance.

#### 3.3 Management Minor for Non-Business Students,

The Management Minor consists of any 18 hours of credit in courses offered by the Asper School of Business. Entrance requirements and enrolment limits vary with a student's faculty of registration. Students planning to enrol in this minor should consult a student advisor in your home faculty.

#### 3.4 Student Responsibility,

The Bachelor of Commerce (Honours) program undergoes changes from time to time. As a result, some changes in program structure, content and regulations may be made for the current and upcoming academic year. Specific program information for the regular program, the co-operative education program option, Joint Programs, and 2+2 Programs may be obtained from the Undergraduate Program Office.

#### Student's Responsibility

It is the responsibility of all students to ensure that they follow the program of study as outlined in their chosen Major and that they meet all the requirements as specified by the University of Manitoba and the Asper School of Business.

When you are registering for courses, it is your responsibility to ensure that you have satisfied all prerequisite and concurrent course requirements.

It is your responsibility to ensure you have registered for the correct courses to satisfy the requirements of the Bachelor of Commerce (Honours) degree.

Read carefully to make sure you are not registered for a course that "May Not Be Held With" a course you have already taken. You will not be allowed to apply both courses toward your degree requirements.

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

#### 3.5 Prerequisite Requirements,

Prerequisite requirements must be met for entry into and continuance in the faculty.

Students must also meet all individual course prerequisites for further study in the program.

A passing grade is acceptable for prerequisite purposes for courses offered by the Asper School of Business unless a higher grade is called for in the course description.

#### 3.6 Degree GPA Requirement for Graduation, Students Admitted in 2011 and Thereafter



Students admitted to the Asper School of Business in 2011 and thereafter must achieve a minimum degree GPA of 2.00 on all 120 credit hours required in the Bachelor of Commerce (Honours) degree program. Students must also achieve a passing grade of "D" or better in each course except for the individual courses required in the Track 1/Foundation course requirements that require a grade of "C" or better in each course.

All Track 1/Foundation courses, Core courses, Major courses, Business Options, and Electives applicable to the Bachelor of Commerce (Honours) degree requirements, as well as the grades achieved in each course, are transferred into the Asper School of Business and are included in the degree GPA.

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

### 3.7 Calculation of the Cumulative GPA,

The computation of the cumulative GPA is the same as that described in the chapter, [General Academic Regulations and Requirements](#).

### 3.8 Residency Requirement,

All Business students must complete a minimum of 60 credit hours at the University of Manitoba in order to satisfy the residence requirement of the Bachelor of Commerce (Honours) degree.

Students participating in approved International Exchange Programs may be exempt from the 60 credit hour requirement. Please consult with the Undergraduate Program Office for more details.

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

Students considering completing course work at another university are referred to the chapter, General Academic Regulations and Policy, and the section on Letter of Permission.

### 3.9 Time Limit for Completion of the Degree,

The maximum period of eight years for completion of degree requirements will be reduced by one year for each block of 15 credit hours of advance standing received at the point of admission. This time limit applies to all students, whether full-time or part-time.

The maximum period for completion of degree requirements for students enrolled in the co-operative education option is currently under faculty review.

A student who does not complete all degree requirements within the time limit permitted will be required to withdraw from the faculty. Students may appeal to the Undergraduate

Program Committee for a one year time extension; all appeals must be accompanied by a detailed letter explaining the student's circumstances and appropriate supporting documentation.

### 3.10 Maximum Number of Failures,

Each student in the Asper School of Business is permitted a maximum of 15 credit hours of failures. Students who exceed their limit of failures will be placed on Academic Suspension. Such students may enter the Reinstatement Program and should contact an Undergraduate Program Advisor in the Undergraduate Program Office for details.

### 3.11 Repeating, Substituting and Extra Courses, Maximum Limit Allowed

Each student will be permitted to repeat or substitute a maximum of 12 credit hours of previously passed courses, with a maximum of 6 credit hours per course within the regulations detailed below.

After completion of the approved course repeat or substitution, only the latest of the grades achieved will be included in the computation of the degree GPA.

#### Required Courses

A student who withdraws from a Core course or who obtains a grade of "F" in such a course should repeat that course during the following Fall or Winter Term. If a student repeats a course for which a grade was recorded, only the latest of the grades achieved will be included in the computation of the degree GPA. Therefore, if on repeating the course, the student does not complete the course successfully, a grade of "F" will be recorded for that course on the student's history.

Students may not substitute another course for a Core course.

#### Major Courses

Students who achieve a grade of "F" in a Major course must either repeat that course or substitute another Major course if the Major requirements permit an alternate choice. Upon completion of the Major course, only the latest of the grades achieved will be included in the computation of the degree GPA. When a course is to be substituted, the student must seek the approval of the Undergraduate Program Office, in writing, prior to enrolling in the new course; failure to do so may result in a denial of the course substitution.

#### Electives and Business Options

Students who achieve a grade of "F" in an Elective or Option may either repeat that course or substitute another approved course in its place. Upon completion of the course, only the latest of the grades achieved will be included in the computation of the degree GPA. When a course is



substituted for a failed Elective or Option, a student must request approval from the Undergraduate Program Office in writing prior to enrolling in the new course; failure to do so may result in a denial of the course substitution.

### Voluntary Repeats

In order to improve their degree GPA, or to meet a prerequisite requirement, students may, with prior approval from the Undergraduate Program Office, voluntarily repeat any course in which a passing grade has been received, subject to any registration restrictions that may be published on the faculty website and subject to the limits imposed at the point of admission. Students must request approval from the Undergraduate Program Office prior to enrolling in the course; failure to do so may result in a denial of the course substitution.

After completion of the approved course repeat or substitution, only the latest of the grades achieved will be included in the computation of the degree GPA.

### Extra Courses

Students who would like to take courses extra to their degree are permitted providing prior approval of the Undergraduate Program Office is obtained prior to registration. When a course is extra to the degree but a student would like to substitute the course for another already in the degree, the student must seek the approval of the Undergraduate Program Office, in writing, prior to enrolling in the new course; failure to do so may result in a denial of the course substitution.

### 3.12 Completing Two Majors (Second Major), Students Wishing to Complete Two Majors

Note the following Asper School of Business policy: "Students will not be given any registration priority for a second major." The Asper School of Business cannot guarantee that you will obtain space in the courses you would like for a second major.

Students who have completed all the requirements or who have all the courses in registration for a major are not permitted to formally declare a different major unless there is space in the courses needed to complete the different major. Students are not permitted to declare a different major in order to obtain space in full courses.

### 3.13 Failure to Meet Requirements and the Suspension & Reinstatement Regulations,

Failure to meet the requirements for graduation within the limits specified above will result in the student being placed on Academic Suspension. Such students may enter the Reinstatement Program and should contact an Undergraduate Program Advisor in the Undergraduate Program Office for details.

Students in jeopardy should carefully monitor their first term results since they will be withdrawn from all second term Business courses if suspended, regardless of the date of official notification of the suspension.

Students who have been placed on Academic Suspension will only be considered for reinstatement into the Asper School of Business after the specific conditions of reinstatement have been met. Details concerning reinstatement are available from the Undergraduate Program Office.

### 3.14 Withdrawal from the Bachelor of Commerce (Honours) Program,

- A student who does not register for any courses in the Fall or Winter term after admission will cease to be a student in the Asper School of Business. Such students must re-apply for admission if that is desired and will have to meet the requirements for admission at the time of the new application.
- A student who registers for course work in the Fall or Winter term after admission but subsequently voluntarily withdraws from all course work may be permitted to re-register at any time thereafter, subject to all faculty policies and requirements as they existed at the time of first admission and completing a signed declaration of non-attendance at another post-secondary institution. Such students should be aware of the time limit for completion of the degree.
- A student who applies for transfer to another university program and subsequently registers for courses will cease to be a student in the Asper School of Business. Such a student must re-apply for admission if that is desired and will have to meet the requirements for admission at the time of the new application.

### 3.15 Withdrawal from Individual Courses, Required Courses

Students in the Asper School of Business may withdraw without academic penalty from a required Core course provided they have not previously failed or withdrawn from that course and that they have met the Voluntary Withdrawal deadlines established by the university (see Deadline for Withdrawals in the Academic Schedule).

### Electives and Business Options

Students may withdraw without academic penalty from an Elective or Option provided they do so before the final date for withdrawal (see Deadline for Withdrawals in the Academic Schedule).

### Authorized Withdrawals

Authorized Withdrawals from courses after the registration revision period in each term may be granted on the basis of medical and compassionate grounds. A medical certificate signed by a physician or other appropriate professional must



document medical grounds. Appeals based on compassionate reasons and circumstances must be supported by appropriate documentation. Students requesting Authorized Withdrawals should contact the Undergraduate Program Office.

### 3.16 Withdrawal from the Co-operative Education Option,

Students may be required to withdraw from the program for any of the following reasons:

- Failure to maintain the minimum academic requirements of the Asper School of Business,
- Failure to maintain the minimum credit hour requirements of the academic term in the co-op option,
- Unsatisfactory performance in the work place during a work term,
- Failure to observe the ethical standards of the Asper School and the University in place at the time; including being found guilty of academic dishonesty, or
- When, in the opinion of the Co-op Director and Faculty Advisor, the student does not exhibit sufficient qualities of ability, skills, aptitudes, attitudes, diligence or motivation to complete the program successfully.

Students who wish to withdraw voluntarily from the Co-op Program may do so by written letter to the Co-op Director at any time prior to accepting a position for a work term. Any work term grades earned by the co-op student up to the date of the letter of withdrawal will stand.

Details for all continuing requirements or withdrawal procedures can be found in the Co-operative Education Option/Program Academic Regulations document.

### 3.17 Maximum Course Load/Minimum Course Load,

Students are not permitted to take more than 18 credit hours during an academic term without permission from the the Undergraduate Program Manager.

Students enrolled in the Co-operative Education Option are not permitted to take more than 3 credit hours during a co-operative work term.

Students enrolled in the Co-operative Education Option must register in a minimum of 9 credit hours between co-op work terms.

### 3.18 Course Selection and Requirements,

All students are limited to a maximum of six credit hours of IDM 4050 Readings in Management, IDM 4070 Management Research 1, and IDM 4080 Management Research 2. These courses are considered Business Options, rather than as part of any Major.

ACC 3050 Taxation Accounting, FIN 3270 Personal Financial Planning, FIN 3420 Security Analysis and FIN 3440 Real Estate Investments are also considered general Options. They are not part of any Major.

### 3.19 Eligibility Requirements for Awards,

To be eligible for the Dean's Honours List a student must complete a minimum of 12 credit hours of courses at the University of Manitoba during one academic term and achieve a term GPA of at least 3.50. Students participating in approved International Exchange Programs may be eligible for the Dean's Honour List.

To be eligible for most awards, a student must complete a minimum of 24 credit hours of courses at the University of Manitoba during an academic year consisting of consecutive Fall and Winter terms. Co-operative Education students are eligible to apply for most awards; please check the Asper Undergraduate Program web site and/or with the Financial Aid and Awards Office for more information on the eligibility requirements for Co-operative Education students.

The degree "With Distinction" will be awarded to all students graduating with the Bachelor of Commerce (Honours) Degree who attain a degree GPA of 3.80 or better on the following criteria: students admitted to the Asper School of Business in 2011 and thereafter will have their degree GPA determined on the basis of all courses which form a part of the 120 credit hours required in the four-year degree program.

The University Gold Medal in Business shall be awarded annually. The candidate for the one medal may be a graduate from either the Bachelor of Commerce (Honours) or the Bachelor of Commerce (Honours) [Co-operative Education Option]. Students graduating in October, February, and May are eligible for the Gold Medal in Business which shall be awarded annually at the spring convocation.

Students interested in the detailed terms of reference for the University Gold Medal in Business or who are interested in bursaries, awards and scholarships should contact the Undergraduate Program Office in Asper or the [University's Financial Aid and Awards Office](#).

### 3.20 Examination Regulations,

The faculty adheres to the General University Examination Regulations Policy. For particular examination regulations, including deferred examinations, pertinent to the Faculty, students are referred to the pamphlet, Examination Regulations for the Asper School of Business, available from the Undergraduate Program Office. The faculty does not offer supplemental examinations. The faculty does not offer Challenge for Credit examinations.

### 3.21 Letter of Permission to Take Courses at Another University for Transfer of Credit,

Students wishing to complete courses at another institution for credit at the University of Manitoba will apply for written permission from the Registrar's Office prior to registering at the other institution. Students should apply for the Letter of Permission at least 4-6 weeks in advance. Information about "Studying at another University" and applying for a Letter of Permission are on the Registrar's web site at: [umanitoba.ca/student/records](http://umanitoba.ca/student/records).



To be eligible to take courses on a Letter of Permission, a Business student must:

i) be applying to take a course not currently offered by Asper (when applying to take a course transferred as an Asper course) in the term for which they are applying and

ii) have completed a minimum of 24 credit hours in the Asper School of Business in addition to any transfer credits received upon admission.

Grades achieved in courses taken on a Letter of Permission shall be transferred to the student's academic record and shall be included in the cumulative and degree GPA, but will not be included in a student's term GPA.

### 3.22 Plagiarism, Cheating and Personation,

The Asper School of Business has adopted the Senate definition and policy on plagiarism, cheating and personation as described in the chapter, [General Regulations and Requirements](#). A student found guilty of participating in any of these activities is subject to serious academic penalty and possible prosecution under the Canadian Criminal Code.

### 3.23 Student Appeals of Academic Regulations,

Except as otherwise noted, student appeals should be directed to the Secretary of the Undergraduate Program Committee in the Undergraduate Program Office. The Committee considers appeals from Asper students who request special consideration in respect to rules and regulations governing their programs of study.

A certificate from an appropriate professional agency, such as the [University Counselling Service](#) or a licensed medical practitioner, should support appeals based on compassionate or medical problems.

### 3.24 Security of Academic Records,

The Asper School of Business has adopted supplementary criteria and procedures on access to student academic records to supplement the university policy on [Disclosure and Security](#) of Student Academic Records. Copies of these policies are available in the Undergraduate Program Office. (Currently under review.)

### 3.25 Transcripts and Degree Parchments, Majors on Transcripts

After you graduate with your Bachelor of Commerce (Honours) degree, your formally declared major will appear on your University of Manitoba transcript. Your major will appear on your transcript once you have formally declared it on Aurora. Your major *will not* be listed on the Bachelor of Commerce (Honours) parchment.

If you complete the requirements of a second major within the credit hours required for the Bachelor of Commerce (Honours) degree, you may request that the second major

also appear on your transcript after you graduate. See the Undergraduate Program Office in your graduating term to complete a request form.

### Co-operative Education Option on Transcripts

If you have successfully completed the Co-operative Education Option, it will appear on your University of Manitoba transcript after you graduate with your Bachelor of Commerce (Honours) degree. The Co-operative Education Option will appear on your transcript once you have formally declared it on Aurora. Also, the Co-operative Education Option *will* appear on the Bachelor of Commerce (Honours) parchment.

## SECTION 4: Program and Graduation Requirements

The Bachelor of Commerce (Honours) program comprises 120 credit hours of course work. The Co-operative Education Option also comprises 120 credit hours of course work plus a minimum of three 4-month approved work terms. The degree encompasses the following components which will be listed in detail below: Track 1/Foundation courses, Program Core courses (common to all students), Major courses, Business Options and Elective courses. Each student must declare at least one major and present a minimum Degree Grade Point Average of 2.00. Detailed information on the degree regulations is found in Section 3, in the Undergraduate Program Office (268 Drake) or on the undergraduate web site at: [umanitoba.ca/faculties/management/programs/undergraduate/](http://umanitoba.ca/faculties/management/programs/undergraduate/)

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

### 4.1 Program Requirements for the Bachelor of Commerce (Honours) Program – Track 1 with Guaranteed Admission, Track 1 and Track 2

All students admitted under these tracks (including International Students and International from 2+2 Joint Programs) will complete the Bachelor of Commerce Honours Program. The Bachelor of Commerce (Honours) degree is comprised of 120 credit hours and can be divided into the following components:

- The Track 1/Foundation Course Requirements (24 credit hours)
- The Core (51 credit hours)
- The Major (12 credit hours)
- Business Options (15 credit hours)
- Electives (15 credit hours)
- Business Option or Elective (3 credit hours)

These components comprise 120 credit hours; their associated limits are defined below.

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

### Track 1/Foundation Course Requirements



All students must complete the specified Track 1/Foundation course requirements. Direct Entry students from high school will complete the Track 1/Foundation courses in their first year. Track 1 students complete these requirements prior to their admission to the Asper School of Business. Track 2 students have completed 24 credit hours of university course work but are missing one or more of the specific Track 1/Foundation courses. Track 2 students should complete all outstanding Track 1/Foundation courses during their first year after admission to the Asper School of Business and must achieve a minimum grade of "C" in each outstanding Track 1/Foundation courses.

### The Core

The CORE consists of 51 credit hours of specified mandatory courses from all four departments in this faculty as well as courses taught by the departments of Economics, Environment, Global Political Economy, Political Studies, , Philosophy and Sociology. All students are required to complete the Core. The Core presents the essence of a business degree program. The majority of the Core courses are taken in Years 2 and 3 of the Bachelor of Commerce Honours Program.

### The Major

Each student is required to complete the course requirements of one MAJOR. Each department and the Dean's Office have developed one or more Majors. Each Major consists of a 12 credit hours of course work specified by the department. Subject to demand and faculty resources, specialized Majors are available in Aboriginal Business Studies, Accounting, Actuarial Mathematics, Entrepreneurship/Small Business, Finance, Generalist, Human Resources Management/Industrial Relations, International Business, Logistics and Supply Chain Management, Management Information Systems, Management of Organizations, Marketing, and Operational Research/Operations Management. A list of the Departments and the Majors they oversee is outlined below.

Students will normally choose a Major at the beginning of the third year of the program, following completion of many of

### Course Requirements for Direct Entry, Track 1 and Track 2 Students

The tables below list the Core courses that all Business students must complete. The courses are listed by year in a *suggested* sequence. Students normally complete the Core courses in the sequence shown.

To determine which additional courses to take each year (i.e., non-Core courses) students should consult the listing of course requirements for each year of their chosen Major.

YEAR 1: Track1/Foundation Courses	Cr. Hrs.
ANTH, HIST, MATH, PHIL, POLS, PSYC, SOC (see Note 1)	6
ECON 1010 AND ECON 1020	6
MATH 1520 OR MATH 1500	3
STAT 1000	3
Written English "W" (see Note 2)	3
Elective (see Note 3)	3
Minimum credit hours to qualify (see Note 4)	24

the Core courses, which introduce the areas. Students have an opportunity to transfer from one Major to another, but this opportunity decreases as the student progresses in the program.

### Business Options

This component of the program consists of a required number of Business courses freely selected by the student. These courses are referred to as Business OPTIONS. Students are required to complete 15 credit hours of Options. Some students may want to take Options which will supplement their Major, whereas other students may prefer to broaden their educational base by selecting Business courses in another or several other Majors. Students who want to supplement their Majors may take up to 12 hours of their Options from that area. Students may complete a second Major as part of their Options requirements. Such students should consult with staff in the Undergraduate Program Office.

### Electives

This component of the program is the ELECTIVE requirement. An Elective is any three or six credit hour course freely chosen by the student from courses taught in the degree programs of other faculties and schools, excluding the Asper School of Business. Students must complete 15 credit hours of Electives that meet the following criteria; a minimum of 6 credit hours of the Electives must be at the 2000 Level or higher plus a minimum of 3 credit hours of the Electives must comprise a freely chosen course that meets the Written English "W" requirement at any level.

### Business Option or Elective

This component of the program consists of 3 credit hours which may be either a Business Option or Elective and it must be at the 2000 Level or higher.



Year 1: Core Courses	
GMGT 1010	3
One of : GMGT 2060, GMGT 2070 or MKT 2210	3
Total credit hours (see Note 4)	30
YEAR 2	
ACC 1100	3
ACC 1110	3
FIN 2200	3
GMGT 2010	3
Two of : GMGT 2060, GMGT 2070, MKT 2210; whichever two courses not taken in Year 1 (see Note 5)	6
MIS 2000	3
MSCI 2150	3
Electives (see Note 6)	6
Total credit hours	30
YEAR 3	
HRIR 2440	3
GMGT 3300	3
SCM 2160	3
International Business Requirement (see Note 7)	3
Ethics (see Note 8)	3
Electives, Options & Major Courses (see Notes 6 and 10)	15
Total credit hours	30
YEAR 4	
GMGT 4010	3
Alternative Management Studies (see Note 9)	3
Electives, Options and Major Courses (see Notes 6 and 10)	24
Total credit hours	30
<b>Total Credit Hours Required for Degree</b>	<b>120</b>

**NOTES:**

- 1) 6 credit hours from: Anthropology, History, Mathematics, Philosophy, Political Studies, Psychology, or Sociology. Courses chosen for this requirement must be independent from courses taken to fulfill other degree requirements.
- 2) Students are required to select a three credit hour course to satisfy the Written English "W" requirement. The "W" course for the Foundation course requirement must be from a specific discipline (ARTS 1110, GMGT 1010 and GMGT 2010 are not considered to be from a specific discipline and therefore do not fulfil the Track 1/Foundation Written English course requirement). Courses that satisfy the Written English requirement are listed in the chapter, General Academic Regulations and Policy.
- 3) PHIL 1290 Critical Thinking is a preferred elective.
- 4) For Track 1 transfer students these 24 credit hours of specified courses are the minimum requirements for admission. Direct Entry high school admits will also be taking these Foundation courses in Year 1. All students regardless of admit type must take these courses and achieve a minimum grade of "C" (see applicant bulletin for complete details).
- 5) The prerequisite to GMST 2060 and GMGT 2070 is GMGT 1010 (D).
- 6) In addition to 51 credit hours of Core courses all students must take 12 credit hours in one Major, 15 credit hours of Business Options, 15 credit hours of Electives (which must include a minimum of 6 credit hours at the 2000 Level or higher plus 3 credit hours of Written English "W") plus 3 credit hours of either Business Options or Electives (which must be at the 2000 Level or higher).
- 7) International Business Requirement: One of the following courses must be chosen: ACT 4250, INTB 2200, FIN 3450, HRIR 4520, MKT 3300, MKT 3240 (Cross-Cultural Brand Management topic only) or SCM 3230.
- 8) Ethics requirement: One of the following courses: PHIL 2290, PHIL 2750, PHIL 2790, PHIL 2830, GMGT 3030 or GMGT 3581. If a 6 credit hour course is chosen, 3 credit hours will count as Electives.
- 9) Alternative Management Requirement: One of the following must be chosen: ECON 2540, ECON 2630, ECON 3710, ECON 3810, ENVR 4110, GPE 2700, POLS 3220, POLS 3250, SOC 3870 or GMGT 4210. If a 6 credit hour course is chosen, 3 credit hours will count as Electives. Take careful note of any course prerequisites in your timetable planning.
- 10) Students may register for Electives in any year. Registration in Options and Major courses normally begins in Year 3 of the 4-Year program.

**Course Key**

All Core courses are taught by the Asper School of Business except the following:



SUBJECT		Cr. Hrs.
<b>Economics</b>		
ECON 2540	Political Economy 1: Production and Distribution	3
ECON 2630	An Intro to the World's Economies	6
ECON 3710	Sustainable Development: Issues and Policy	3
ECON 3810	Alternative Approached to Macroeconomic Analysis	3
<b>Environment</b>		
ENVR 4110	Critical Thinking and the Environment	3
<b>Global Political Economy</b>		
GPE 2700	Perspectives on Global Political Economy	3
<b>Political Studies</b>		
POLS 3220	Globalization and the World Economy	3
POLS 3250	International Political Economy	3
<b>Sociology</b>		
SOC 3870	Social Inequality	3
<b>Philosophy</b>		
PHIL 2290	Ethics and Society	6
PHIL 2750	Ethics and the Environment	3
PHIL 2790	Moral Philosophy	6
PHIL 2830	Business Ethics	3

#### 4.2 Program Requirements for Majors

Students who intend to complete a second major should note that when a course is applicable to two different majors, that course may be used to satisfy only one set of major requirements.

#### Aboriginal Business Studies

The Major consists of NATV 4220, IDM 3000 plus six credit hours from ENTR 3100, ENTR 4100, FIN 3250, FIN 3470, GMGT 4150, IDM 4090, NATV 3000 (topic: Aboriginal Wisdom and Spirituality), or NATV 3350.

NOTE: This major is currently under review: Check with the Undergraduate Program Office for a list of acceptable alternatives.

#### Accounting

The Major consists of: ACC 2010, ACC 2020, ACC 3040 and ACC 4030. The prerequisite for ACC 2010 is "ACC 1100 (C+) and for ACC 3040 is ACC 1110 (C+).

#### Actuarial Mathematics

The Major consists of any 12 hours from ACT 2020, ACT 2120, ACT 3130, ACT 3230, ACT 3340, ACT 3530, ACT 4140 and ACT 4340.

Prior to registration, all students interested in or enrolled in Actuarial Mathematics should consult the Director or a Undergraduate Program Advisor for program planning advice.

To facilitate entry into and understanding of material covered in some advanced Actuarial courses, students entering the second year of the four-year program are advised to take the following courses: MATH 2720 plus MATH 2730 or MATH 2750 (which satisfies the elective requirement). Students declaring Actuarial Mathematics as their first major may take these course as either Business Options or non-Business Electives.

Students admitted in Fall 2006 and thereafter are required to attain a minimum grade of "C+" in all Actuarial courses in order to graduate with a Actuarial Mathematics Major.

Student interested in the Actuarial Mathematics major are encouraged to take MATH 1300 and MATH 1700 as Track 1/Foundation courses or alternately as electives in Year 1.

#### Entrepreneurship/Small Business

The Major consists of: ENTR 3100, ENTR 4100, FIN 3470 and one of: ACC 3050, FIN 3250, ACC 3530, , ENTR 3102 (not to be held with the former GMGT 3050), ENTR 3104, ENTR 3106, GMGT 3080, MKT 3220, MKT 3310 or MKT 4270.

#### Finance

The Major consists of: FIN 3410, FIN 3460, FIN 3480, and FIN 4400.

Finance Options are: FIN 3450, FIN 4230, FIN 4260, and FIN 4270. Students in the Finance Major may take all of these courses.

The prerequisite for FIN 3410, FIN 3460 and FIN 3480 is FIN 2200 (C+), MATH 1300 (C) or MATH 1310 (C), and STAT 2000 (C).



### Generalist

The Major consists of one course from the required list of courses from four different Majors (i.e., Options that are not part of a Major's required course requirements are not eligible for the Generalist Major).

### Human Resources Management/Industrial Relations

The Major consists of: HRIR 3450 plus three of the following: HRIR 4410, HRIR 4420, HRIR 4480, HRIR 4520 **OR** HRIR 3450 plus two of the following: HRIR 4410, HRIR 4420, HRIR 4480, HRIR 4520, plus one of the following: HRIR 3430, LABR 3010, LABR 3060, LABR 3070, LABR 3130, and LABR 3140.

Students entering the second year of the four-year program are advised to take HRIR 2440 since it is a prerequisite to advanced courses in the area.

### International Business

The Major consists of: FIN 3450, INTB 2200, HRIR 4520, and MKT 3300.

One of the above four courses may be used in the core program; therefore the major will be comprised of the remaining three courses plus one course from the following list: MKT 3240 Special Topics in Marketing (Cross-Cultural Brand Management topic only), ACT 4250 Managing Insurance Operations in the International Business Environment or SCM 3230 Global Chain Management.

Students majoring in International Business are permitted to take 12 credit hours of a foreign language and/or courses with an international focus from an approved list and have these non-business courses count as Business Options. The list is available in the Undergraduate Program Office.

### Logistics and Supply Chain Management

The Major consists of: SCM 2210, SCM 2230, SCM 3360 plus one of the following: SCM 2220, SCM 2240, SCM 3230, SCM 4250 (not to be held with the former SCM 4240), OPM 4630.

Recommended Business Options/Electives in this area include: MIS 3500, MIS 3510, INTB 2200, HRIR 3450, GMGT 3160, GMGT 4160, MSCI 3400, IDM 4050, IDM 4070, IDM 4080, MKT 3220, MKT 3340, , GEOG 3800, ECON 2450, ECON 2460.

### Management Information Systems

The Major consists of MIS 3500, MIS 3510, MIS 3520, and MIS 4500.

Options available in this area are ACC 3530 and MIS 4250.

Students interested in pursuing the Management Information Systems Major are encouraged to take MIS 2000 in the second year of the four-year program since it is a prerequisite to advanced courses in the area.

Students interested in pursuing the Management Information Systems Major are also encouraged, but not required, to complete COMP 1020.

### Management of Organizations

The Major consists of any 12 hours from: GMGT 3010, GMGT 3020, GMGT 3160, GMGT 4040, GMGT 4140 and GMGT 4150. Students entering the second year of the four-year program are advised to take GMGT 2070 and GMGT 2080 since they are prerequisites to advanced courses in the area.

### Marketing

The Major consists of MKT 3220\*, MKT 3230, MKT 4210 and 3 hours from MKT 3240, MKT 3250, MKT 3300, MKT 3310, MKT 3340, MKT 3390, MKTG 4270 or MKTG 4410. In addition to the 12 credit hours required for the major, Marketing students may take up to an additional 12 credit hours from the above list.

\*Marketing students are also required to take STAT 2000 as one of their electives since it is a prerequisite for MKT 3220.

### Operational Research/Operations Management

The Major consists of any 12 hours from MSCI 3400, OPM 3650, OPM 3660, OPM 3670, MSCI 4220, MSCI 4230, OPM 4620, and OPM 4630.

Prior to registration, all students enrolled in Operational Research/Operations Management should consult the Department Head or a Undergraduate Program Advisor for program planning advice.

### 4.3 Program Requirements for the Co-operative Education Option

All students must complete all 120 credit hours of the program including the Core, one of the Majors listed above in Section 4.2, as well as the Option and Elective course components. Students who intend to complete a Co-operative Education Option must also complete a minimum of three (3) 4-month work terms. Students admitted from September 2011 and who successfully complete the minimum three 3 work terms can combine the work terms together to satisfy 3 credit hours of Business Options. Complete details for entrance and continuing requirements may be obtained from the Undergraduate Program Office.

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.



#### 4.4 Program Requirements for the Asper School of Business/Red River College Joint Program

Prior to admission to the Asper School of Business/Red River College Joint Program, students must complete the Business Administration Diploma (University Stream) at Red River College with a minimum cumulative grade point average of 3.00. Students must have graduated from the Diploma program within the last 5 years to be eligible for admission. Admission is limited and competitive. Following admission to the Asper School of Business, students in the Joint Program will be required to complete 66 credit hours to earn the Bachelor of Commerce (Honours) degree. The 66 credit hours can be divided into the following components: the Core, the Major, Business Options, and Electives. These components and their associated limits are defined below.

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

**NOTE:** The Joint Program is currently under review; transfer credit details are subject to change.

#### The Core

The CORE comprises 30 credit hours of the 66 required in the Joint Program. The Foundation courses (6 credit hours) should be taken in the first year at the Asper School. Students must achieve a minimum "C" grade in each Foundation course. The Program Core courses (24 credit hours) may be taken at any point in the program, but the course GMGT 4010 must be taken in the student's final term. Core courses are listed below in the Course Requirements for RRC Joint Program Students.

#### The Major

Each student must complete the course requirements of one MAJOR. Each Major will consist of a 12 credit hour unit of course work. Information on completing a Second Major is listed in Section 3.12. The Majors are listed in Section 4.2.

Students may begin taking courses for their major as soon as prerequisites are met. Students have an opportunity to

transfer from one Major to another, but this opportunity decreases as the student progresses in the program.

**Note:** Students in the Asper School of Business/Red River College Joint Program who want to major in Finance will be required to take FIN 2200 as one of their Business Options. Likewise, students who want to major in Management of Organizations must take GMGT 2060 as one of their Business Options.

#### Business Options

This component of the program consists of a required number of Business courses freely selected by the student. These courses are referred to as Business OPTIONS. Students must take at least 12 credit hours of Business Options. Some students may want to take Business Options which will supplement their Major, whereas other students may prefer to broaden their educational base by selecting Business courses in another or several other Majors. Students who want to supplement their Majors may take up to 12 credit hours of their Business Options from that area. Students may complete a second Major as part of their Business Options requirements. Such students should consult with staff in the Undergraduate Program Office.

#### Electives

This component of the program is the ELECTIVE requirement. An elective is any three or six credit hour course freely chosen by the student from courses taught in the degree programs of other faculties and schools, excluding the Asper School of Business. Students must take at least 9 credit hours of Electives that meet the following criteria; a 3 credit hour course at the 2000 Level or higher, 3 credit hours must be a freely chosen course that meets the Written English "W" requirement at any level plus a 3 credit hour elective at any level.

#### Business Option or Elective

This component of the program consists of 3 credit hours which may be either a Business Option or Elective and it must be at the 2000 Level or higher.

#### Course Requirements for RRC Joint Program Students

The course requirements for the Asper School of Business/Red River College Joint Program are as follows. Students should register for the Foundation courses in their first year at the University of Manitoba and must achieve a minimum "C" grade in each course.

Foundation Courses	Cr. Hrs
MATH 1520 or MATH 1500 (see Note 1)	3
Written English Course (see Note 2)	3
Program Core Requirements	
ACC 1110	3
MIS 2000	3
GMGT 1010	3
SCM 2160	3
GMGT 4010 (must be taken in final term)	3



Ethics (see Note 3)	3
Alternative Management Studies (see Note 4)	3
International Business (see Note 5)	3
Total Credit Hours	30

**NOTES:**

- 1) The prerequisite for MATH 1520 or MATH 1500 is a 60 per cent in Grade 12 Pre-Calculus Mathematics 40S or equivalent or a grade of "C" in the Mathematical Skills course taught by Extended Education. Students who have been admitted into the Asper School of Business/Red River College Joint Program and who successfully complete the Mathematical Skills course may be entitled to an additional three credit hour Elective from their Business Administration diploma.
- 2) Students are required to select a three credit hour course to satisfy the Written English "W" requirement. The "W" course for the Foundation course requirement must be from a specific discipline (ARTS 1110, GMGT 1010 and GMGT 2010 are not considered to be from a specific discipline and therefore do not fulfil the Track 1/Foundation Written English course requirement). Courses that satisfy the Written English requirement are listed in the chapter, General Academic Regulations and Policy.
- 3) All Management students must complete three credit hours of Ethics. Students may fulfil this requirement by completing one of the following courses: PHIL 2290 (6), PHIL 2750 (3), PHIL 2790 (6), PHIL 2830 (3), GMGT 3030 (3) or GMGT 3581 (3). If a 6 credit hour course is chosen, 3 credit hours will count toward the core Ethics requirement and 3 credit hours will count as Electives.
- 4) Alternative Management Requirement: One of the following must be chosen: ECON 2540, ECON 2630, ECON 3710, ECON 3810, ENVR 4110, GPE 2700, POLS 3220, POLS 3250, SOC 3870 or GMGT 4210. If a 6 credit hour course is chosen, 3 credit hours will count as Electives. Take careful note of any course prerequisites in your timetable planning.
- 5) International Business Requirement: One of the following courses must be chosen: ACT 4250, INTB 2200, FIN 3450, HRIR 4520, MKT 3300, MKT 3240 (Cross-Cultural Brand Management topic only) or SCM 3230.

Overall Program Requirements	Cr. Hrs.
Foundation Courses	6
Program Core Courses	24
Major Courses	12
Business Options	12
Electives	9
Business Option or Elective	3
Total Credit Hours	66

**4.5 Program Requirements for the Asper School of Business /Assiniboine Community College Joint Program**

Prior to admission to the Asper School of Business/Assiniboine Community College Joint Program students must complete the Business Administration Diploma (University Stream) at Assiniboine Community College with a minimum cumulative grade point average of 3.00. Students must have graduated from the Diploma program within the last 5 years to be eligible for admission. Admission is limited and competitive. Following admission to the Asper School of Business, students in the Joint Program will be required to complete 66 credit hours to earn the Bachelor of Commerce (Honours) degree. The 66 credit hours can be divided into the following components: the Core, the Major, Business Options, and Elective courses.

These components and their associated limits are defined below.

**NOTE:** The Joint Program is currently under review; transfer credit details are subject to change.

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

**The Core**

The CORE comprises 39 credit hours of the 66 required in the Joint Program. The Foundation courses (12 credit hours) should be taken in the first year in the Asper School. Students must achieve a minimum "C" grade in each Track 1/Foundation course. The Program Core courses (27 credit hours) may be taken at any point in the program, but the course GMGT 4010 must be taken in the student's final term. Core courses are listed below in Course Requirements for ACC Joint Program Students.

**The Major**

Each student must complete the course requirements of one MAJOR. Each Major will consist of a 12 credit hour unit of course work. Information on completing a Second Major is listed in Section 3.12. The Majors are listed Section 4.2.

Students may begin taking courses for their major as soon as prerequisites are met. Students have an opportunity to transfer from one Major to another, but this opportunity decreases as the student progresses in the program.

**Note:** Students in the Asper School of Business/Assiniboine Community College Joint Program who want to major in Finance will be required to take FIN 2200 as one of their Business options. Likewise, students who want to major in Marketing must take MKT 2210 as one of their Business Options.



### Business Options

This component of the program consists of a required number of Business courses freely selected by the student. These courses are referred to as Business OPTIONS. Students must take 9 credit hours of Business Options. Some students may want to take Business Options which will supplement their Major, whereas other students may prefer to broaden their educational base by selecting Business courses in other Majors. Students who want to supplement their Majors may take up to 9 hours of their Business Options from that area. Students may complete a second Major as part of their Business Options requirements. Such students should consult with staff in the Undergraduate Program Office.

### Electives

This component of the program is the ELECTIVE requirement. An Elective is any three or six credit hour course freely chosen by the student from courses taught in the degree programs of other faculties and schools, excluding the Asper School of Business. Students must 3 credit hours of Electives that is a freely chosen course that meets the Written English "W" requirement at any level.

### Business Option or Elective

This component of the program consists of 3 credit hours which may be either a Business Option or Elective and it must be at the 2000 Level or higher.

### Course Requirements for ACC Joint Program Students

The course requirements for the Asper School of Business/Assiniboine Community College Joint Program are as follows. Students should register for the Track 1/Foundation courses in their first year at the University of Manitoba and must achieve a minimum "C" grade in each course.

Foundation Courses	Cr. Hrs.
6 credit hours from: ANTH, HIST, MATH, PHIL, POLS, PSYC OR SOC (See Note 1)	6
MATH 1520 or MATH 1500 (see Note 2)	3
Written English Course (see Note 3)	3
Program Core Requirements	
MIS 2000	3
GMGT 2060	3
GMGT 1010	3
MSCI 2150	3
SCM 2160	3
GMGT 4010 (must be taken in final term)	3
Ethics (see Note 4)	3
Alternative Management Studies (see Note 5)	3
International Business (see Note 6)	3
Total Credit Hours	39

#### NOTES:

- 1) 6 credit hours from: Anthropology, History, Mathematics, Philosophy, Political Studies, Psychology, or Sociology. Courses chosen for this requirement must be independent from courses taken to fulfill other degree requirements.
- 2) The prerequisite for MATH 1520 or MATH 1500 is 60 per cent in Grade 12 Pre-Calculus Mathematics 40S or equivalent or a grade of "C" in the Mathematical Skills course taught by Extended Education. Students who have been admitted into the Asper School of Business/ Assiniboine Community College Joint Program and who successfully complete the Mathematical Skills course may be entitled to an additional three credit hour Elective from their Business Administration diploma.
- 3) Students are required to select a three credit hour course to satisfy the Written English "W" requirement. The "W" course for the Foundation course requirement must be from a specific discipline (ARTS 1110, GMGT 1010 and GMGT 2010 are not considered to be from a specific discipline and therefore do not fulfil the Track 1/Foundation Written English course requirement). Courses that satisfy the Written English requirement are listed in the chapter, General Academic Regulations and Policy.
- 4) All Business students must complete three credit hours of Ethics. Students may fulfil this requirement by completing one of the following courses: PHIL 2290 (6), PHIL 2750 (3), PHIL 2790 (6), PHIL 2830 (3), , GMGT 3030 (3) or GMGT 3581 (3). If a 6 credit hour course is chosen, 3 credit hours will count toward the core Ethics requirement and 3 credit hours will count as Electives.
- 5) Alternative Management Requirement: One of the following must be chosen: ECON 2540, ECON 2630, ECON 3710, ECON 3810, ENVR 4110, GPE 2700, POLS 3220, POLS 3250, SOC 3870 or GMGT 4210. If a 6 credit hour course is chosen, 3 credit hours will count as Electives. Take careful note of any course prerequisites in your timetable planning.
- 6) International Business Requirement: One of the following courses must be chosen: ACT 4250, INTB 2200, FIN 3450, HRIR 4520, MKT 3300, MKT 3240 (Cross-Cultural Brand Management topic only) or SCM 3230.

Overall Program Requirements	Cr. Hrs.
Track 1/Foundation Courses	12
Program Core Courses	27
Major Courses	12
Business Options	9



Electives	3	
Business Option or Elective	3	
Total credit hours		66

#### 4.6 Program Requirements for the Asper School of Business /University College of the North Joint Program

Prior to admission to the Asper School of Business/University College of the North Joint Program students must complete the Business Administration Diploma (University Stream) at University College of the North with a minimum cumulative grade point average of 3.00. Students must have graduated from the Diploma program within the last 5 years to be eligible for admission. Admission is limited and competitive. Following admission to the Asper School of Business, students in the Joint Program will be required to complete 81 credit hours to earn the Bachelor of Commerce (Honours) degree. The 81 credit hours can be divided into the following components: the Core, the Major, Business Options, and Electives. These components and their associated limits are defined below.

**NOTE:** The Joint Program is currently under review; transfer credit details are subject to change.

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

##### The Core

The CORE comprises 39 credit hours of the 81 required in the Joint Program. The Foundation courses (15 credit hours) should be taken in the first year in the Asper School. Students must achieve a minimum "C" grade in each Foundation course. The Program Core courses (24 credit hours) may be taken at any point in the program, but the course GMGT 4010 must be taken in the student's final term. Core courses are listed below in Course Requirements for UCN Joint Program Students

##### The Major

Each student must complete the course requirements of one MAJOR. Each Major will consist of a 12 credit hour unit of

##### Course Requirements for UCN Joint Program Students

The course requirements for the Asper School of Business/University College of the North Joint Program are as follows. Students should register for the Foundation courses in their first year at the University of Manitoba and must achieve a minimum "C" grade in each course.

course work. Information on completing a Second Major is listed in Section 3.12. The Majors are listed in Section 4.2.

Students may begin taking courses for their major as soon as prerequisites are met. Students have an opportunity to transfer from one Major to another, but this opportunity decreases as the student progresses in the program.

**Note:** Students in the Asper School of Business/University College of the North Joint Program who want to major in Finance will be required to take FIN 2200 as one of their Business Options. Likewise, students who want to major in Marketing must take MKT 2210 as one of their Business Options.

##### Business Options

This component of the program consists of a required number of Business courses freely selected by the student. These courses are referred to as Business OPTIONS. Students must take 15 credit hours of Business Options. Some students may want to take Business Options which will supplement their Major, whereas other students may prefer to broaden their educational base by selecting Business courses in other Majors. Students who want to supplement their Major may take up to 12 hours of their Business Options from that area. Students may complete a second Major as part of their Business Options requirements. Such students should consult with staff in the Undergraduate Program Office.

##### Electives

This component of the program is the ELECTIVE requirement. An Elective is any three or six credit hour course freely chosen by the student from courses taught in the degree programs of other faculties and schools, excluding the Asper School of Business. Students must take 12 credit hours of Electives that meet the following criteria; 6 credit hours must be at the 2000 Level or higher, 3 credit hours must be a freely chosen course that meets the Written English "W" requirement at any level plus a 3 credit hour elective at any level.

##### Business Option or Elective

This component of the program consists of 3 credit hours which may be either a Business Option or Elective and it must be at the 2000 Level or higher.



Foundation Courses	Cr. Hrs.
6 credit hours from: ANTH, HIST, MATH, PHIL, POLS, PSYC OR SOC (See Note 1)	6
MATH 1520 or MATH 1500 (see Note 2)	3
Written English Course (see Note 3)	3
STAT 1000	3
<b>Program Core Requirements</b>	
MIS 2000	3
GMGT 1010	3
MSCI 2150	3
SCM 2160	3
GMGT 4010 (must be taken in final term)	3
Ethics (see note 4)	3
Alternative Management Studies (see Note 5)	3
International Business (see Note 6)	3
Total Credit Hours	39

**NOTES:**

- 1) 6 credit hours from: Anthropology, History, Mathematics, Philosophy, Political Studies, Psychology, or Sociology. Courses chosen for this requirement must be independent from courses taken to fulfill other degree requirements.
- 2) The prerequisite for MATH 1520 or MATH 1500 is a 60 per cent in Grade 12 Pre-Calculus Mathematics 40S or equivalent or a grade of "C" in the Mathematical Skills course taught by Extended Education. Students who have been admitted into the Asper School of Business/University College of the North Joint Program and who successfully complete the Mathematical Skills course may be entitled to an additional three credit hour Elective from their Business Administration diploma.
- 3) Students are required to select a three credit hour course to satisfy the Written English "W" requirement. The "W" course for the Foundation course requirement must be from a specific discipline (ARTS 1110, GMGT 1010 and GMGT 2010 are not considered to be from a specific discipline and therefore do not fulfil the Track 1/Foundation Written English course requirement). Courses that satisfy the Written English requirement are listed in the chapter, General Academic Regulations and Policy.
- 4) All Business students must complete three credit hours of Ethics. Students may fulfil this requirement by completing one of the following courses: PHIL 2290 (6), PHIL 2750 (3), PHIL 2790 (6), PHIL 2830 (3), GMGT 3030 or GMGT 3581 (3). If a 6 credit hour course is chosen, 3 credit hours will count toward the core Ethics requirement and 3 credit hours will count as Electives.
- 5) Alternative Management Requirement: One of the following must be chosen: ECON 2540, ECON 2630, ECON 3710, ECON 3810, ENVR 4110, GPE 2700, POLS 3220, POLS 3250, SOC 3870 or GMGT 4210. If a 6 credit hour course is chosen, 3 credit hours will count as Electives. Take careful note of any course prerequisites in your timetable planning.
- 6) International Business Requirement: One of the following courses must be chosen: ACT 4250, INTB 2200, FIN 3450, HRIR 4520, MKT 3300, MKT 3240 (Cross-Cultural Brand Management topic only) or SCM 3230.

Overall Program Requirements	Cr. Hrs.
Foundation Courses	15
Program Core Courses	24
Major Courses	12
Business Options	15
Electives	12
Business Option or Elective	3
Total Credit Hours	81

**4.7 Program Requirements for the Asper School of Business /École technique et professionnelle joint program**

Prior to admission to the Asper School of Business/École technique et professionnelle Joint Program students must complete the Business Administration Diploma (University Stream) at École technique et professionnelle with a minimum cumulative grade point average of 3.00. Students must have graduated from the Diploma program within the last 5 years to be eligible for admission. Admission is limited and competitive. Following admission to the Asper School of Business, students in the Joint Program will be required to complete 66 credit hours to earn the Bachelor of Commerce (Honours) degree. The 66 credit hours can be divided into the following components: the Core, the Major, Business Options, and Electives. These components and their associated limits are defined below.

**NOTE:** Students admitted prior to September 2011 should refer to the 2010-2011 Undergraduate Calendar for a description of their program requirements.

**The Core**

The CORE comprises 36 credit hours of the 66 required in the Joint Program. The Foundation courses (12 credit hours) should be taken in the first year in the Asper School. Students must achieve a minimum "C" grade in each Foundation course. The Program Core courses (24 credit hours) may be taken at any point in the program, but the course GMGT 4010 must be taken in the student's final term. Core courses are listed below in Course Requirements for ETP Joint Program Students.

**The Major**



Each student must complete the course requirements of one MAJOR. Each Major will consist of a 12 credit hour unit of course work. Information on completing a Second Major is listed in Section 3.12. The Majors are listed in Section 4.2.

Students may begin taking courses for their major as soon as prerequisites are met. Students have an opportunity to transfer from one Major to another, but this opportunity decreases as the student progresses in the program.

**Note:** Students in the Asper School of Business/École technique et professionnelle joint program who want to major in Finance will be required to take FIN 2200 as one of their Business Options.

### Business Options

This component of the program consists of a required number of Business courses freely selected by the student. These courses are referred to as Business OPTIONS. Students must take at least nine and not more than 9 hours of Business Options. Some students may want to take Business Options which will supplement their Major, whereas other students may prefer to broaden their

educational base by selecting Business courses in other Majors. Students who want to supplement their Majors may take up to 9 hours of their Business Options from that area. Students may complete a second Major as part of their Business Options requirements. Such students should consult with staff in the Undergraduate Program Office.

### Electives

This component of the program is the ELECTIVE requirement. An Elective is any three or six credit hour course freely chosen by the student from courses taught in the degree programs of other faculties and schools, excluding the Asper School of Business. Students must take at least six credit hours of Electives that meet the following criteria; 3 credit hours must be at the 2000 Level or higher and 3 credit hours must be a freely chosen course that meets the Written English "W" requirement at any level.

### Business Option or Elective

This component of the program consists of 3 credit hours which may be either a Business Option or Elective but it must be at the 2000 Level or higher.

### Course Requirements for ETP Joint Program Students

The course requirements for the Asper School of Business/École technique et professionnelle Joint Program are as follows. Students should register for the Foundation courses in their first year at the University of Manitoba and must achieve a minimum "C" grade in each course.

Foundation Requirements	Cr. Hrs.
6 credit hours from: ANTH, HIST, MATH, PHIL, POLS, PSYC OR SOC (See Note 1)	6
MATH 1520 or MATH 1500 (see Note 2)	3
Written English Course/Elective (see Note 3)	3
Program Core Requirements	
MIS 2000	3
GMGT 1010	3
MSCI 2150	3
SCM 2160	3
GMGT 4010 (must be taken in final term)	3
Ethics (see note 4)	3
Alternative Management Studies (see Note 5)	3
International Business (see Note 6)	3
Total Credit Hours	36

### NOTES:

- 1) 6 credit hours from: Anthropology, History, Mathematics, Philosophy, Political Studies, Psychology, or Sociology. Courses chosen for this requirement must be independent from courses taken to fulfill other degree requirements.
- 2) The prerequisite for MATH 1520 or MATH 1500 is a 60 per cent in Grade 12 Pre-Calculus Mathematics 40S or equivalent or a grade of "C" in the Mathematical Skills course taught by Extended Education. Students who have been admitted into the Asper School of Business/École technique et professionnelle Joint Program and who successfully complete the Mathematical Skills course may be entitled to an additional three credit hour Elective from their Business Administration diploma.
- 3) Students are required to select a three credit hour course to satisfy the Written English "W" requirement. The "W" course for the Foundation course requirement must be from a specific discipline (ARTS 1110, GMGT 1010 and GMGT 2010 are not considered to be from a specific discipline and therefore do not fulfil the Track 1/Foundation Written English course requirement). Courses that satisfy the Written English requirement are listed in the chapter, General Academic Regulations and Policy.
- 4) All Business students must complete three credit hours of Ethics. Students may fulfil this requirement by completing one of the following courses: PHIL 2290 (6), PHIL 2750 (3), PHIL 2790 (6), PHIL 2830 (3), GMGT 3030 or GMGT 3581 (3). If a 6 credit hour course is chosen, 3 credit hours will count toward the core Ethics requirement and 3 credit hours will count as Electives.
- 5) Alternative Management Requirement: One of the following must be chosen: ECON 2540, ECON 2630, ECON 3710, ECON 3810, ENVR 4110, GPE 2700, POLS 3220, POLS 3250, SOC 3870 or GMGT 4210. If a 6 credit hour course is chosen, 3 credit hours will count as Electives. Take careful note of any course prerequisites in your timetable planning.



6) International Business Requirement: One of the following courses must be chosen: ACT 4250, INTB 2200, FIN 3450, HRIR 4520, MKT 3300, MKT 3240 (Cross-Cultural Brand Management topic only) or SCM 3230.

Overall Program Requirements	Cr. Hrs.
Foundation Courses	12
Program Core Courses	24
Major Courses	12
Business Options	9
Electives	6
Business Option or Elective	3
Total Credit Hours	66

### SECTION 5.1 Accounting and Finance- Accounting 1000 Level (ACC)

**ACC 1100** Introductory Financial Accounting Cr.Hrs.3  
(Lab required) Examination of accounting postulates underlying the preparation and presentation of financial statements.

**ACC 1110** Introductory Managerial Accounting Cr.Hrs.3  
(Lab required). Role of accounting in creation and application of business information used by decision-makers in the management of enterprise. Prerequisite: ACC1100 (009.110) (D). Prerequisite or Concurrent Requirement: ECON 1010 (D) and ECON 1020 (D) or the former ECON 1200 (018.120) (D).

### SECTION 5.2 Accounting and Finance- Accounting -2000 Level (ACC)

**ACC 2010** Intermediate Accounting - Assets Cr.Hrs.3  
(Formerly 009.201) Accounting policies and practices dealing with calculation and measurement of assets and related reporting problems. Prerequisite: ACC 1100 (or 009.110) (C+).

**ACC 2020** Intermediate Accounting - Equities Cr.Hrs.3  
(Formerly 009.202) Consideration of current accounting relating to equities with attention to the accounting treatment of current and long-term liabilities, income tax allocation, share capital, and surplus. Students may not hold credit for both ACC 2020 (or 009.202) and FIN 3250 (or 009.325). Prerequisite: ACC 2010 (or 009.201) (D).

### SECTION 5.3 Accounting and Finance- Accounting -3000 Level (ACC)

**ACC 3030** Advanced Accounting Cr.Hrs.3  
(Formerly 009.303) Topics include: partnerships, consolidations, mergers, reporting on conglomerates, and fund accounting. Not offered every year. Prerequisites: ACC 2010 (or 009.201) (D) and ACC 2020 (or 009.202)(D) or approval of department head.

**ACC 3040** Cost Accounting Cr.Hrs.3  
(Formerly 009.304) Study of accounting concepts and functions as they relate to product costing, planning, control, and decision-making. Prerequisite: ACC 1110 (or 009.111)

(C+).

**ACC 3050** Taxation Accounting Cr.Hrs.3  
(Formerly 009.305) Structure and concepts of the Canadian tax system, emphasis on current tax practices. Prerequisite: ACC 1100 (or 009.110) (C+).

**ACC 3530** Accounting Information Systems Cr.Hrs.3  
(Formerly 009.353) Role of accounting systems in total management information systems; design and installation of accounting systems. Prerequisites: ACC 1110 or ACC 1111 (or 009.111) (D) and MIS 2000 or MIS 2001 (or 009.200)(D).

### SECTION 5.4 Accounting and Finance- Accounting 4000 Level (ACC)

**ACC 4010** Auditing Cr.Hrs.3  
(Formerly 009.401) Study of philosophy and concepts of auditing, legal and ethical responsibilities of the auditor, basic techniques of auditing including statistical sampling and flowcharting, and the operational audit. Prerequisites: [ACC 2010 (or 009.201) and ACC 2020 (or 009.202) (D)] or approval of department head.

**ACC 4030** Accounting Theory Cr.Hrs.3  
(Formerly 009.403) Examination of principles and postulates of accounting theory. Coverage of selected topics will vary from year to year depending on interests of course participants. Prerequisites: ACC 2010 (or 009.201) (D) and FIN 2200 (or 9.220) (D). Prerequisite or Concurrent Requirement: ACC 2020 (or 009.202) (D).

**ACC 4040** Advanced Managerial Accounting Cr.Hrs.3  
(Formerly 009.404) A critical examination of managerial accounting techniques and the controllership function. Prerequisite: ACC 3040 (or 009.304) (D).

### SECTION 5.5 Accounting and Finance- Finance 2000 Level (FIN)

**FIN 2200** Corporation Finance Cr.Hrs.3  
An introduction to corporate finance regarding the allocation & acquisition of funds. Topics include: discounted cash flows, capital budgeting, financial instruments, cost of capital, risk-return trade-offs, market efficiency, capital structure and the use of derivatives. Prerequisite: [ACC 1100 (or 009.110) (D)] and [MATH 1500 or MATH 1520 (C)] and [STAT 1000 or STAT 1001 (C)] and [ECON 1010 (C) and ECON 1020 (C) or the former ECON 1200 (or 018.120) (C)].



## SECTION 5.6 Accounting and Finance- Finance 3000 Level (FIN)

**FIN 3250** Financial Statement Analysis Cr.Hrs.3  
(Formerly 009.325) A study of the methods and techniques used for interpretation of annual financial reports and the significance of alternative accounting policies on reported income. Students may not hold credit for both FIN 3250 (or 009.325) and ACC 2020 (or 009.202). Prerequisite: ACC 1100 (or 009.110) (D).

**FIN 3270** Personal Financial Planning Cr.Hrs.3  
(Formerly 009.327) An introduction to financial planning techniques used in professional practice. Topics include financial assessment, income tax planning, risk management, insurance, debt and credit management, investments, retirement planning, and estate planning. Prerequisite: FIN 2200 (or 009.220) (D).

**FIN 3400** Investment Banking Cr.Hrs.3  
(Formerly 009.340) The practice and theory of investment banking including valuation, initial public offerings, mergers and acquisitions, and restructuring. Prerequisite: FIN 2200 (or 009.220) (C+).

**FIN 3410** Investments Cr.Hrs.3  
An introduction to investment analysis and modern portfolio theory. Topics include equilibrium in the capital markets, fixed income securities, equities and derivative instruments. Prerequisite: [FIN 2200 (or 009.220) (C+)] and [MATH 1300 or MATH 1310 (C)] and [STAT 2000 (C)].

**FIN 3420** Security Analysis Cr.Hrs.3  
This course provides a practical application of techniques to analyse a company for investment purposes and evaluate purchases of stock and fixed-income securities. Topics include financial statement analysis, ratio analysis, alternative methods for forecasting corporate profits and dividends, risk assessment, and valuation techniques. Prerequisites: FIN 2200 (or 009.220) (C+).

**FIN 3440** Real Estate Investments Cr.Hrs.3  
An introduction to real estate finance. Topics include valuation, financing, transaction, tax and legal issues. Prerequisite: FIN 2200 (or 009.220) (C+).

**FIN 3450** International Finance Cr.Hrs.3  
An introduction to the theory of comparative advantage, foreign exchange markets, international parity relations, international debt and equity markets, international debt operating exposures, and international capital budgeting. Prerequisite: FIN 2200 (or 009.220) (C+).

**FIN 3460** Financial Markets and Institutions Cr.Hrs.3  
A study of financial systems with emphasis on Canada. Major topics include monetary policy, financial markets, financial institutions, financial regulation and risk management. Students may not hold credit for both FIN 3460 (or 009.346) and ECON 3640 (or 018.364). Prerequisite: [FIN 2200 (or 009.220) (C+)] and [MATH 1300 or MATH 1310 (C)] and [STAT 2000 (C)].

**FIN 3470** Small Business Finance Cr.Hrs.3  
(Formerly 009.347) Study of the financial issues faced by small business enterprises. Prerequisite: FIN 2200 (or

009.220) (D).

**FIN 3480** Corporate Finance Theory and Practice Cr.Hrs.3  
Intermediate Corporate Finance including the following topics: Capital budgeting theory and techniques, determination of relevant cost of capital, capital structure, dividend policy, leasing and other special topics. Prerequisite: [FIN 2200 (or 009.220) (C+)] and [MATH 1300 or MATH 1310 (C)] and [STAT 2000 (C)].

## SECTION 5.7 Accounting and Finance- Finance -4000 Level (FIN)

**FIN 4230** Selected Topics in Finance Cr.Hrs.3  
(Formerly 009.423) A study of current issues in finance. Topics considered will depend on the interests and needs of the participants. Prerequisite: FIN 2200 (or 009.220) (C+).

**FIN 4260** Advanced Finance Theory Cr.Hrs.3  
(Formerly 009.426) Theories that provide the foundation for modern corporate finance. Empirical tests of finance theories. Implications for managers. Prerequisites: FIN 3410 (or 009.341) (D) and FIN 3480 (or 009.348) (D).

**FIN 4270** Options and Futures Cr.Hrs.3  
Mechanics of futures, options and swaps markets. Topics include arbitrage, hedging, forward rate agreements, models of derivative valuation and value-at-risk. Prerequisite: FIN 3410 (or 009.341) (D).

**FIN 4400** Financial Management Practices Cr.Hrs.3  
Application of theoretical models in finance to real-world problems using cases. Topics include working capital management, long-term investment and financing decisions, valuation, risk management, reorganizations and international financial management. Prerequisite: FIN 3480 (or 009.348) (D).

## SECTION 5.8 Accounting and Finance- Management Info Systems 2000 Level (MIS)

**MIS 2000** Information Systems for Management Cr.Hrs.3  
(Lab required) Introduction to information systems in organizations, systems development/acquisition, and management issues concerning information technology in organizations.

## SECTION 5.9 Accounting and Finance- Management Info Systems 3000 Level (MIS)

**MIS 3500** Database Management Systems Cr.Hrs.3  
(Formerly 009.350) Designing, developing and managing database systems, by using mainstream design methodologies and popular development tools. Prerequisites: [MIS 3510 (or 009.351) (D)] and [COMP 1010 (or 074.101) (C)].

**MIS 3510** Systems Analysis and Design Cr.Hrs.3  
(Formerly 009.351) Analyzing business tasks, processes,



information and information technology, and designing information systems by employing methodologies, techniques and popular software used by information systems professionals. Prerequisites: MIS 2000 (or 009.200) (C+).

**MIS 3520** Data Communications and Networking Cr.Hrs.3 (Formerly 009.352) A study of basic data communications topics, including communication media, protocols, network security, network topologies (local and wide area networks), Web development and network management issues. Prerequisite: MIS 2000 (or 009.200) (C+).

### SECTION 5.10 Accounting and Finance- Management Info Systems 4000 Level (MIS)

**MIS 4250** Advanced Topics in Management Information Systems Cr.Hrs.3 (Formerly 009.425) A study of current issues in MIS. The topics for this course will vary over time, depending on student interests, faculty interests, and student demand. Not offered every year. Prerequisite: consent of instructor.

**MIS 4500** Management Information Systems Strategy Cr.Hrs.3 (Formerly 009.450) A survey of the various issues associated with managing information as a resource. Explores MIS planning frameworks and tools, and the linkages between information systems, organizational structure and organizational strategy. Prerequisites: at least two of the following: (Formerly 009.450) A survey of the various issues associated with managing information as a resource. Explores MIS planning frameworks and tools, and the linkages between information systems, organizational structure and organizational strategy. Prerequisites: at least two of the following: ACC 3530 (or 009.353) (D), MIS 3500 (or 009.350) (D), MIS 3510 (or 009.351) (D), MIS 3520 (or 009.352) (D), MIS 4250 (or 009.425) (D).

### SECTION 5.11 Warren Centre for Actuarial Studies 2000 Level (ACT)

**ACT 2020** Economic and Financial Applications Cr.Hrs.3 (Formerly 010.202) A synthesis of macroeconomic issues, quantitative aspects of finance using interest theory, and insurance economics. Prerequisite: ACT 2120 (or 010.212) (C+).

**ACT 2120** Interest Theory Cr.Hrs.3  
The application of calculus and probability to discrete and continuous interest functions. Key topics are the measurement of interest, present and accumulated values, and annuities. May not be held with the former 010.212 or 010.232 or ACT 3320 (or 010.332). Prerequisite: MATH 1690 (or 136.169) (B) or MATH 1700 or MATH 1701 (or 136.170) (B) or MATH 1710 (or 136.171) (B). Prerequisite or Concurrent Requirements: [MATH 2750 (or 136.275) (D) or MATH 2720 (or 136.272 or 136.270) (D) or MATH 2730 (or 136.273 or 136.271) (D)] and STAT 2400 (D).

**ACT 2210** Introduction to Risk Management Cr.Hrs.3 (Formerly 010.221) Mathematical tools for the quantitative

assessment of risk and their application to problems encountered in risk management. Prerequisite: MATH 1700 (or 136.170) or MATH 1690 (or 136.169) (D). Prerequisite or Concurrent Requirement: [MATH 2750 (or 136.275) (D) or MATH 2730 (or 136.273 or 136.271) (D)] and [STAT 2000 or 005.200) (D)]; or consent of instructor.

### SECTION 5.12 Warren Centre for Actuarial Studies 3000 Level (ACT)

**ACT 3130** Actuarial Models 1 Cr.Hrs.3 (Formerly 010.313) Elementary concepts respecting the quantification of the financial impact of contingent payments. May not be held with the former 010.347. Prerequisite or Concurrent Requirements: ACT 2120 (or 010.212) (C+); and STAT 3400 (or the former STAT 3500 or 005.350) (D).

**ACT 3230** Actuarial Models 2 Cr.Hrs.3 (Formerly 010.323) Intermediate and advanced concepts respecting the quantification of the financial impact of contingent payments. Not to be held with the former 010.348. Prerequisite: ACT 3130 (or 010.313) (C+). Prerequisite or Concurrent Requirement: STAT 3800 (or the former STAT 3600 or 005.360) (D).

**ACT 3340** Financial Derivatives for Actuarial Practice Cr.Hrs.3  
Introduction of interest rate models and rational valuation of derivative securities. Prerequisite: ACT 2020 (C+) or consent of instructor.

**ACT 3530** Actuarial Models 4 Cr.Hrs.3 (Formerly 010.353) Survival Models, Stochastic Process Models, and Simulation Models. May not be held with the former 010.447. Prerequisite: ACT 3130 (or 010.313) (C+). Prerequisite or Concurrent Requirement: ACT 3230 (or 10.323) (D).

### SECTION 5.13 Warren Centre for Actuarial Studies 4000 Level (ACT)

**ACT 4000** Advanced Actuarial Topics Cr.Hrs.3 (Formerly 010.400) A selection of advanced topics of current actuarial interest. Prerequisite: ACT 3230 (or 010.323) (D).

**ACT 4060** Actuarial Aspects of Investment Practice Cr.Hrs.3 (Formerly 010.406) This course examines stochastic interest rates and tools and techniques for coping with general product issues in asset/liability management. May not be offered every year. Students may not hold credit for both ACT 4060 (or 010.406) and the former 010.448 Topic Asset/Liability Management. Prerequisites: [FIN 2200 (or 009.220) (C+)] and [FIN 3410 (or 009.341) (D)], or consent of instructor.

**ACT 4140** Actuarial Modeling Methods 1 Cr.Hrs.3 (Formerly 010.414) Estimation and Fitting of Survival Models. May not hold credit with the former 010.448 Topic Survival Models. Prerequisite or Concurrent Requirement: STAT 3800 (or the former STAT 3600 or 005.360) (D).

**ACT 4150** Pension Mathematics Cr.Hrs.3 (Formerly 010.415) Actuarial applications for defined benefit



pension plans. Actuarial cost methods, funding levels, operation of pension plans from an actuarial perspective. Students may not hold credit with ACT 7550 (or 010.755). May not be offered every year. Prerequisite: ACT 3230 (010.323) (D).

**ACT 4240** Actuarial Modeling Methods 2 Cr.Hrs.3 (Formerly 010.424) Estimation and Fitting of Frequency and Severity Models. May not be offered every year. Prerequisite: ACT 3330 (or 010.333) (D).

**ACT 4250** Managing Insurance Operations in the International Business Environment Cr.Hrs.3 Introduction of the risks inherent in insurance products and assets, as well as the relationships between assets and liabilities across the entire operations of the global insurance enterprise. Prerequisites: FIN 2200 (C+) or consent of instructor.

**ACT 4340** Actuarial Modeling Methods 3 Cr.Hrs.3 (Formerly 010.434) Classical, Bayesian and Buhlmann Credibility Models. The connection between Credibility Theory and Experience Rating. Underlying assumptions for the different methods. Simulation in Estimating and Fitting Actuarial Models. May not hold credit with the former 010.488 Topic Credibility Theory. May not be offered every year. Prerequisite: ACT 4140 (010.424) (C+).

### SECTION 5.14 Business Administration- Entrepreneurship/Small Business 2000 Level (ENTR).

**ENTR 2010** Managing the Smaller Business Cr.Hrs.3 Small firms dominated the Canadian economic scene and contribute to the nations' economic welfare in a major way but pose different managerial issues and problems for their owner/managers than larger organizations. This course will focus specifically on how to effectively manage and grow the smaller firm. Students may not hold credit for both ENTR 2010 and ENTR 3100. This course is not open to students in the Asper School of Business. This course is not for students who will pursue a major in Entrepreneurship/Small Business. U1 students may take this course.

**ENTR 2020** Starting a New Business Cr.Hrs.3 This is a course for students in all Faculties who may wish to start a business of their own at some time or assess their potential for such an option. It will cover a broad range of topics to increase your understanding of what it takes to succeed in an entrepreneurial career. Students may not hold credit for both ENTR 2020 and ENTR 4100. This course is not open to students in the Asper School of Business. This course is not for students who will pursue a major in Entrepreneurship/Small Business. U1 students may take this course.

### SECTION 5.15 Business Administration- Entrepreneurship/Small Business 3000 Level (ENTR)

**ENTR 3100** Small Business Management Cr.Hrs.3 (Formerly 118.310) An appreciation of the primary issues that should be considered in starting and managing a small

business within the Canadian context. Students may not hold credit for both ENTR 3100 and ENTR 2010. Prerequisites: ACC 1100 (or 009.110) (D), and MKT 2210 (or 118.221) (D), and GMGT 2060 (GMGT 2080 or 027.208) (D)].

**ENTR 3102** Technological Entrepreneurship Cr.Hrs.3 An overview of the inter-relationship between technology and entrepreneurship. An appreciation of the role of technical entrepreneurship in the economy, how a technology strategy is developed, implemented and defended as well as the societal implications of technological entrepreneurship. Prerequisite: MKT 2210 (or 118.221) (D).

**ENTR 3104** Selected Topics in Small Business/Entrepreneurship Cr.Hrs.3 A study of selected areas of recent development related to small business/entrepreneurship. Topics may include innovation and creativity, venture financing, opportunity identification and recognition, franchising and entry strategies of new business. Prerequisite: [MKT 2210 (118.221) (D)] and [GMGT 2060 (D) or GMGT 2080 (027.208) (D)].

**ENTR 3106** Family Business Management Cr.Hrs.3 An examination of the unique challenges inherent in the management of a family business. Topics include founder relinquishment, the need for succession planning and firm regeneration, the core actors and their issues, ownership structure and estate planning. Prerequisite: GMGT 2060 (D) or GMGT 2080 (027.208) (D).

### SECTION 5.16 Business Administration- Entrepreneurship/Small Business 4000 Level (ENTR)

**ENTR 4100** New Venture Analysis Cr.Hrs.3 A project oriented course focusing on the identification and evaluation of viable new venture concepts and their associated risks, problems, and opportunities. Students may not hold credit for both ENTR 4100 and ENTR 2020. Prerequisites: MKT 2210 (or 118.221) (D) and ACC 1110 (or 009.111) (D) and [GMGT 2060 (D) or GMGT 2080 (or 027.208) (D)].

### SECTION 5.17 Business Administration- General Management 1000 Level (GMGT)

**GMGT 1010** Business and Society Cr.Hrs.3 The course will provide over arching frameworks to examine the nature, role, and importance of business in society. Key internal operations of business organizations will be discussed (e.g. finance, marketing, operations), but the majority of the course examines the relationships that business firms must balance among key stakeholders in their external environment (i.e. government, owners, customers, communities, suppliers, future generations, etc.). Students will examine various institutional contexts (e.g. economic, political-legal, and socio-cultural) and critically think about relationships between business and society, mindfully considering alternative approaches to management. Special emphasis will be placed on contemporary social issues in business (e.g. sustainable



development, corporate social responsibility).

## SECTION 5.18 Business Administration- General Management 2000 Level (GMGT)

### GMGT 2010 Business Communications Cr.Hrs.3

The course provides an introduction to theoretical, cultural, and ethical bases of effective communication. Another goal is to develop students' interpersonal, oral, and written communication skills at individual, group, and organizational levels. The students will also develop analytical, problem-solving, rhetorical, and critical thinking abilities required in organizational and business settings. Students are strongly recommended to take GMGT 2010 in their first 30 credit hours in Asper. Not to be held for credit with GMGT 2000.

### GMGT 2030 Administrative Theory Cr.Hrs.3

(Formerly 027.203) Examination of the underlying principles concerning internal management of organizations. Emphasis on the study and analysis of various theoretical approaches to management. This course is not open to students registered in the Asper School of Business. Students may not hold credit for both GMGT 2030 (or 027.203) and GMGT 2060 (formerly GMGT 2080 or 027.208) or GMGT 2070 (or 027.207).

### GMGT 2060 Management and Organizational Theory Cr.Hrs.3

Examination of the underlying principles concerning the formation of organizations and their internal management. Emphasis on the study and analysis of various theoretical approaches to organization theory and management. Prerequisite: GMGT 1010 (D). Students may not hold for credit with either GMGT 2080 (027.208) or GMGT 2030 (027.203).

### GMGT 2070 Introduction to Organizational Behaviour Cr.Hrs.3

(Formerly 027.207) Examination of the impact of human behaviour on the formal and informal organization. Topics include leadership, work groups, organizational conflict, and communications. Prerequisite: GMGT 1010 (D). Students may not hold credit for both GMGT 2070 (or 27.207) and GMGT 2030 (or 027.203).

### GMGT 2120 Business/Government Relations Cr.Hrs.3

(Formerly 027.212) Analysis of the interaction between business firms and government in the creation, modification, and implementation of government policies that affect business. Study of the ways business can influence government decision-making. Prerequisite: [ECON 1010 (D) and ECON 1020 (D)] or ECON 1200 (or 018.120) (D).

## SECTION 5.19 Business Administration- General Management 3000 Level (GMGT)

### GMGT 3010 Management Decision-Making Cr.Hrs.3

(Formerly 027.301) The decision-making process and factors that enter into making the decisions, including the objectives and approaches to decision-making, the basic type of managerial decisions, and exemplification of decision in operations. Prerequisites: [GMGT 2060 (GMGT 2080 or 027.208) (D)] and GMGT 2070 (or 027.207) (D).

### GMGT 3020 Seminar in Administration Cr.Hrs.3

(Formerly 027.302) Selected problem areas and issues as they relate to administration of complex organizations. Prerequisites: [GMGT 2060 (or GMGT 2080 (027.203) (D) or GMGT 2080 (or 027.208) (D)] and GMGT 2070 (or 027.207) (D), or consent of instructor.

### GMGT 3030 Contemporary Social Issues in Business Cr.Hrs.3

Study of key issues in the relationship of business organizations and society with emphasis on the impact of management. Prerequisites: [GMGT 2060 or former GMGT 2080 (or 027.208) (D)] and GMGT 2070 (or 027.207) (D).

### GMGT 3080 Issues in Technological Change Cr.Hrs.3

(Formerly 027.308) Analysis of the nature of invention and innovation including human, financial, economic, and legal factors. Social implications of innovation. Public policy towards research, invention, and innovation.

### GMGT 3160 Managerial Economics Cr.Hrs.3

(Formerly 027.316) Principles and techniques of managerial economics with applications from business and the public sector. Prerequisite: [ECON 1010 and ECON 1020] or ECON 1200 (or 018.120) (D) or equivalent.

### GMGT 3170 Administration of the Public Sector Cr.Hrs.3

(Formerly 027.317) Application of contemporary concepts of the administrative process: approaches and problems involved in performing managerial functions in public sector organizations with emphasis on socio-political issues. Prerequisite: GMGT 2060 (or GMGT 2080 or 027.208) (D).

### GMGT 3300 Commercial Law Cr.Hrs.3

(Formerly 027.330) General history of law, the organization of courts, the Canadian Constitution, federal and provincial legislative functions. Legal concepts and problems relating to business organization, contracts, principal and agent, negotiable instruments, common torts, and bankruptcy proceedings.

### GMGT 3500 Communications: Contextual Applications Cr.Hrs.3

(Formerly 027.350) This course is designed to introduce students to basic linguistically specialized areas of typical business and administrative settings. Course offered at St. Boniface College.

## SECTION 5.20 Business Administration- General Management 4000 Level (GMGT)

### GMGT 4010 Administrative Policy Cr.Hrs.3

(Formerly 027.401) Studies of policies available to business enterprise; with case studies to focus attention on problems involved in formulating and administering policies with interdisciplinary considerations. Take only in final term of program or with consent of department head. Prerequisite: prior to being admitted to GMGT 4010, students must be in Year 4, in the final term prior to graduation in the Asper School and have successfully completed (with a minimum grade of (D) in each course) all 30 credit hours of courses specified in Year 2 of the 4-Year Program. Prerequisite or Concurrent Requirement: all remaining core courses specified in Year 3 and 4 of the 4-Year Program (with a minimum grade of (D) in each course).

**GMGT 4040** Advanced Organization Theory and Behaviour Cr.Hrs.3

(Formerly 027.404) An analysis of the human and structural aspects of organizations and how their interrelationship influences organizational performance. Topics covered include leadership, motivation, conflict, and organizational politics. The influence of technology, size, and the external environment on organizational structure is also examined. Prerequisite: [GMGT 2060 (D) or GMGT 2080 (or 027.208 (D))] and GMGT 2070 (or 027.207) (D).

**GMGT 4110** Commercial Law 2 Cr.Hrs.3

(Formerly 027.411) Aspects of the law relating to business units, including a study of the law relating to proprietorships, partnerships and corporations, and secured transactions. Not taught every year. Prerequisite: GMGT 3300 (or 027.330) (D).

**GMGT 4140** Evaluation Techniques for Management Cr.Hrs.3

(Formerly 027.414) The development of specific techniques for program evaluation, the design of evaluations, the implementation of an evaluation within an ongoing organizational environment, and the problems associated with applying findings. Prerequisite: MIS 2000 (or 009.200) (D).

**GMGT 4150** Managing Not-For-Profit Organizations Cr.Hrs.3

(Formerly 027.415) A description and analysis of the management perspective that is unique to organizations operating in the not-for-profit sector of the economy. Examination of both the internal and external environment of management in not-for-profit organizations. Prerequisites: [GMGT 2060 (D) or GMGT 2080 (or 027.208) (D)] and GMGT 2070 (or 027.207) (D).

**GMGT 4160** Seminar in Business-Government Relations Cr.Hrs.3

(Formerly 027.416) Description and analysis of significant, current issues in the business-government relationship at an advanced level. Prerequisite: GMGT 1010 (D) or GMGT 2120 (or 027.212) (D).

**GMGT 4210** Seminar in Management and Capitalism Cr.Hrs.3

This course provides students with an understanding of the institutions, developments, and debates associated with modern capitalism and their implications for management. Students will explore alternative management perspectives and bi-directional interactions within the context of larger issues. It is designed to ensure that students are introduced to a variety of different perspectives, and that no single perspective is unduly privileged over others. Prerequisite: GMGT 1010 (D) or GMGT 2120 (D).

**SECTION 5.21 Business Administration-  
Human Resources/Industrial Relations  
2000 Level (HRIR)**

**HRIR 2440** Human Resource Management Cr.Hrs.3  
(Formerly 027.244) Introduction to principles and procedures in the management of human resources. Topics include diversity management, conflict resolution, employment, law, planning, job analysis, performance appraisal, staffing,

compensation, union-management relations, and current issues.

**SECTION 5.22 Business Administration-  
Human Resource/Industrial Relations  
3000 Level (HRIR)**

**HRIR 3430** Selected Topics in Industrial Relations Cr.Hrs.3  
(Formerly 027.343) Analysis of specific topics or issues in the employment relationships in an industrial society. Prerequisites: [HRIR 2440 (or 027.244) (D)] and [HRIR 3450 (or 027.345 or 027.341) (D)]. or consent of instructor.

**HRIR 3450** Labour and Employment Relations Cr.Hrs.3  
(Formerly 027.345) This course is to enhance knowledge and understanding of labour and employment relations in Canada and beyond. It addresses various issues and debates about these relations; their history, structure, and functioning; management employment relations practices; the role of labour unions; collective bargaining; and contemporary developments and alternatives. May not be held with the former 027.341.

**SECTION 5.23 Business Administration-  
Human Resources/Industrial Relations  
4000 Level (HRIR)**

**HRIR 4410** Staffing and Management Development Cr.Hrs.3  
(Formerly 027.441) A review of: employment planning; recruitment and selection; internal placement; out placement; performance appraisal; career development. Training needs analysis, methods and evaluation. Prerequisite: HRIR 2440 (or 027.244) (D).

**HRIR 4420** Compensation Cr.Hrs.3  
(Formerly 027.442) A review of the major concepts and design of compensation systems including: strategy, internal equity, external competitiveness, rewarding individual contributions, performance incentives, employee benefits, government regulations, union role in compensation; budgets and administration. Prerequisite: HRIR 2440 (or 027.244) (D).

**HRIR 4480** Collective Bargaining and Administration Cr.Hrs.3  
(Formerly 027.448) Detailed examination of the elements and issues in contract negotiation and administration and of the legal framework imposed on public and private negotiations. Comparison of Canadian industrial relations system with other national systems. Prerequisite: HRIR 3450 (or 027.345 or 027.341) (D).

**HRIR 4520** Comparative Industrial Relations and Human Resource Management Cr.Hrs.3  
(Formerly 027.452) To provide an international perspective on industrial relations (IR) and human resource management (HRM) through analysis and comparison of IR systems and HRM practice across selected countries and of current developments therein. Also covers theories and issues relevant to these topics. Students are encouraged, but not required, to complete HRIR 3450 (or 027.345 or 027.341)



(D) prior to taking this course.

### SECTION 5.24 Business Administration- International Business 2000 Level (INTB)

**INTB 2200** International Management Cr.Hrs.3  
(Formerly 027.220) Analysis of the practice of management in an international setting. Examines the cultural, political, and economic environments which influence managerial decision-making in an international context.

### SECTION 5.27 Business Administration- Leadership (LEAD)

**LEAD 2010** Learning to Lead Cr.Hrs.3  
This seminar provides students with an introduction to and understanding of effective leadership and its application to a variety of group and organizational contexts. The classes encourage interdisciplinary discussions of theoretical, philosophical, historical, and technical elements of effective leadership. The course allows students to reflect on and develop their own leadership style through interactive lectures, experiential activities, and action learning in groups and organizations in which students want to lead and be led. This seminar is intended for all students that have an interest in leadership theory and effective leadership practices. Students may not hold credit for both LEAD 2010 and ARTS 1160. Prerequisite: Students must have completed 15 credit hours of passed courses to register in LEAD 2010.

### SECTION 5.28 Interdepartmental Courses 2000 Level (IDM)

**IDM 2980** Work Term 1 Cr.Hrs.0  
Work assignment in business, industry, or government for students registered in the Asper School of Business Cooperative option. Requires submissions of a written report covering the work completed during the four-month professional assignment. (Pass/Fail).

**IDM 2982** Co-op Work Term 1 Cr.Hrs.1  
Work assignment in business, industry, or government for students registered in the Asper School of Business co-operative option. Prerequisite: Written permission from the Asper School of Business Co-operative Education Office. May not be held with IDM 2980.

### SECTION 5.29 Interdepartmental 3000 Level (IDM)

**IDM 3980** Work Term 2 Cr.Hrs.0  
Work assignment in business, industry, or government for students registered in the Asper School of Business Cooperative option. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail).

**IDM 3982** Co-op Work Term 2 Cr.Hrs.1  
Work assignment in business, industry, or government for students registered in the Asper School of Business co-operative option. Prerequisite: IDM 2980 with a grade of P or

IDM 2982 with a grade of C and written permission from the Asper School of Business Cooperative Education Office. May not be held with IDM 3980.

### SECTION 5.30 Interdepartmental Courses 4000 Level (IDM)

**IDM 4050** Readings in Management Cr.Hrs.3  
(Formerly 098.405) Supervised readings in one of the areas of Management. Students are limited to a maximum of six hours of readings and research courses.

**IDM 4070** Management Research 1 Cr.Hrs.3  
(Formerly 098.407) Individually supervised preparation of a detailed research proposal for an advanced study in one of the areas of Management. Students are limited to a maximum of six hours of readings and research courses.

**IDM 4080** Management Research 2 Cr.Hrs.3  
(Formerly 098.408) Individually supervised research and preparation of a paper in one of the areas of Management based on the proposal developed in IDM 4070 (or 098.407). Students are limited to a maximum of six hours of readings and research courses.

**IDM 4980** Work Term 3 Cr.Hrs.0  
Work assignment in business, industry, or government for students registered in the Asper School of Business Co-operative option. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail)

**IDM 4982** Co-op Work Term 3 Cr.Hrs.1  
Work assignment in business, industry, or government for students registered in the Asper School of Business co-operative option. Prerequisite: IDM 3980 with a grade of P or IDM 3982 with a grade of C and written permission from the Asper School of Business Co-operative Education Office. Not to be held with IDM 4980.

### SECTION 5.31 Marketing 2000 Level(MKT)

**MKT 2210** Fundamentals of Marketing Cr.Hrs.3  
(Formerly 118.221) Analysis of marketing problems, emphasizing various alternatives available for achieving economic efficiency in the distribution process; public policy with respect to marketing.

### SECTION 5.32 Marketing 3000 Level (MKT)

**MKT 3220** Marketing Research Cr.Hrs.3  
Study of the planning and implementation of research required to make informed marketing decisions. Prerequisites: MKT 2210 (or 118.221) (D) and STAT 2000 (or 005.200) (D) or consent of instructor.

**MKT 3230** Consumer Behaviour Cr.Hrs.3  
(Formerly 118.323) Study of buying behaviour of individuals and organizations as affected by psychological and sociological forces within society. Prerequisite: MKT 2210 (or 118.221) (D).

**MKT 3240** Selected Topics in Marketing Cr.Hrs.3  
(Formerly 118.324) Analysis of marketing as it relates to



specialized fields. Prerequisite: MKT 2210 (or 118.221) (D).

**MKT 3250** Marketing Strategy Cr.Hrs.3  
(Formerly 118.325) Integration of sales and marketing strategies, including planning, formulation, and implementation. Emphasis on the role and importance of marketing strategy in overall corporate growth. Prerequisite: MKT 2210 (or 118.221) (D).

**MKT 3300** International Marketing Cr.Hrs.3  
(Formerly 118.330) A study of international similarities and differences in marketing structures, functions and processes as related to the socio-economic and cultural environment and a consideration of the opportunities and problems of international marketing. Prerequisite: MKT 2210 (or 118.221) (D).

**MKT 3310** Retail and Channel Management Cr.Hrs.3  
(Formerly 118.331) The study of the functions performed by traditional and e-commerce distributors. Topics include location and competitive analysis, promotion, merchandising, buying, design, selection and historical development.  
(Formerly 118.331) The study of the functions performed by traditional and e-commerce distributors. Topics include location and competitive analysis, promotion, merchandising, buying, design, selection and historical development. May not be held with the former 118.321. Prerequisite: MKT 2210 (or 118.221) (D).

**MKT 3340** Services Marketing Cr.Hrs.3  
(Formerly 118.334) An examination of the differences in the marketing of goods versus services. Topics covered include service process design and management, problem identification and resolution, positioning issues, the importance of human resources, and promotional issues. Prerequisite: MKT 2210 (or 118.221) (D).

**MKT 3390** Integrated Marketing Communications Cr.Hrs.3  
(Formerly 118.339) The process of using promotional tools in a unified way so that a synergistic communications is created. The course examines the roles of advertising, sales promotion, direct marketing, and the internet within this broader framework. May not hold with the former 118.329. Prerequisite: MKT 2210 (or 118.221) (D).

### SECTION 5.33 Marketing 4000 Level (MKT)

**MKT 4210** Marketing Management Cr.Hrs.3  
Study of location and nature of markets, techniques by which firms attempt to affect the demand for their goods and services and the significance of these effects on business and society. Can be taken only in final year of program. Prerequisites: MKT 3220 (118.322) (D) or MKT 3230 (118.323) (D), and one other 3000 or 4000 level Marketing course (D), and ACC 1110 (009.111). Pre- or co-requisite: either MKT 3220 (118.322) (D) or MKT 3230 (118.323) (D), but not both.

**MKT 4270** Sales Management Cr.Hrs.3  
(Formerly 118.427) The study of the management of the personal selling area including an examination of the selling function, the sales manager, and sales management. Prerequisite: MKT 2210 (or 118.221) (D).

### SECTION 5.34 Supply Chain Management- Management Science 2000 Level (MSCI)

**MSCI 2150** Introduction to Management Sciences Cr.Hrs.3  
An introduction to management science techniques and models. Topics include linear programming, distribution problems, decision theory and queuing models. May not hold with the former 164.215 or 027.215 or ABIZ 2520. Prerequisites: [MATH 1520 (or 136.152) (C) or MATH 1500 (or 136.150) (C) or equivalent] and [STAT 1000 (005.100) (C) or equivalent]

### SECTION 5.35 Supply Chain Management- Management Science 3000 Level (MSCI)

**MSCI 3400** Intermediate Management Science Cr.Hrs.3  
(Formerly 164.340) Operations research models used in the analysis of management problems. Topics include network analysis, deterministic inventory models, dynamic programming and game theory. May not hold with the former 027.340. Prerequisite: MSCI 2150 (or 164.215) (D) or consent of instructor.

### SECTION 5.36 Supply Chain Management - Management Science 4000 Level (MSCI)

**MSCI 4200** Topics in Management Science Cr.Hrs.3  
(Formerly 164.420) Topics of current interest in management science. May not hold with former 027.420. Prerequisite: MSCI 2150 (or 164.215) (D). Not taught every year.

**MSCI 4220** Management Science Models in Business and Industry Cr.Hrs.3  
(Formerly 164.422) An applied course providing practical experience in modeling and solving business and industrial problems. Emphasis to be placed upon analysis, formulation, solution and implementation. Not taught every year. May not hold with former 027.422. Prerequisite or Concurrent Requirement: one of MSCI 3400 (or 164.340 or 027.340) (D) or MSCI 4200 (or 164.420 or 027.420) (D) or MSCI 4230 (or 164.423 or 027.423) (D).

### SECTION 5.38 Supply Chain Management- Operations 3000 Level (OPM)

**OPM 3630** Simulation Models for Operations Management Cr.Hrs.3  
(Formerly 164.363) Currently not offered. May not hold with former 027.363.

**OPM 3640** Project Planning and Control Cr.Hrs.3  
(Formerly 164.364) Currently not offered. May not hold with former 027.364.

**OPM 3650** Management of Quality and Reliability Cr.Hrs.3  
(Formerly 164.365) This course offers a practical introduction to modern quality assurance and reliability management concepts, methods and practices. It builds upon the relevant subject matter in basic courses in production management and prepares for positions in the field of quality and reliability management. May not hold with



former 027.365. Prerequisite: SCM 2160 [or the former OPM 2600 (or 164.260) (D)] and STAT 1000 (C).

**OPM 3660** Operations Management in Service Organizations Cr.Hrs.3 (Formerly 164.366) This course explores the applications of operations management concepts to the management of service operations. The characteristics of a service operation, while generally comparable to manufacturing a product, often place a unique demand upon the service manager. These demands, along with the analysis of actual company situations through case study applications, are emphasized. May not hold with former 027.366. Prerequisite: SCM 2160 [or former OPM 2600 (or 164.260)] (D) and STAT 1000 (C).

**OPM 3670** POM Project in Industry Cr.Hrs.3 An applied course, designed to bridge the gap between theoretical concepts developed in previous POM courses and current industrial practices by means of an industrial project. May not hold with former 027.367. Prerequisites: [SCM 2160 or former OPM 2600 (or 164.260 or 027.260) (D)] and STAT 1000 (C) or consent of instructor.

### SECTION 5.39 Supply Chain Management-Operations 4000 Level (OPM)

**OPM 4620** Production Management Seminar Cr.Hrs.3 (Formerly 164.462) Problems, development, and application of analytical methods in production and operations management with emphasis on planning and control. May not hold with former 027.462. Prerequisite: MSCI 2150 (or 164.215) (D) and SCM 2160 or OPM 2600 (or 164.260) (D). May not hold with former 027.462.

### SECTION 5.40 Supply Chain Management-Supply Chain Management 2000 Level (SCM)

**SCM 2160** Supply Chain and Operations Management Cr.Hrs.3 Study of supply chain management (SCM) and operations management. Positions operations management as a critical area of study within SCM. Focuses on process approach and system design. May not hold credit for both SCM 2160 and the former OPM 2600. Prerequisites: None.

**SCM 2210** Transportation Principles Cr.Hrs.3 (Formerly 164.221) Demand forecasting, cost analysis, regulation of carriers, role of transport in economic development, project appraisal and transport planning. Also offered as ABIZ 2210 by the Department of Agribusiness and Agricultural Economics. May not be held with ABIZ 2210 (or 061.221). Prerequisite: [ECON 1010 and ECON 1020 (C)] or former ECON 1200 (or 018.120) (D).

**SCM 2220** Selected Topics in Logistics and Transportation Cr.Hrs.3 (Formerly 164.222) This course provides coverage on a number of critical topics in Supply Chain Logistics and Transportation. Areas of emphasis are based on current issues confronting managers and regulators/policy makers such as global supply chain logistics and transportation

policy.

**SCM 2230** Introduction to Supply Chain Management Cr.Hrs.3 (Formerly 164.223) An examination of the management activities that are necessary to ensure an efficient flow of materials, funds, and information among the various organizations in supply chains, from the acquisition of raw materials to the delivery of the finished product to the end user.

**SCM 2240** Purchasing and Supply Management Cr.Hrs.3 Purchasing and supply management is an increasingly important element of corporate strategy as global supply chains become longer and more complex. In this course, students will learn about a major paradigm shift in purchasing, from a clerical activity to a strategic corporate function. The course covers strategic supply management, inter-organizational relationships, product and service specifications, price and cost analysis, negotiation, quality management, supply chain information technology, and other important purchasing topics, from a supply chain management perspective. Students may not hold credit for both SCM 2240 and SCM 2220 Topic: Purchasing Management.

### SECTION 5.41 Supply Chain Management-Supply Chain Management 3000 Level (SCM)

**SCM 3230** Global Supply Chains Cr.Hrs.3 (Formerly 164.323) The course provides a global orientation to supply chain management, with a particular emphasis on the global linkages between organizations in international supply chains. Supply chain management practices in selected countries are also examined. Prerequisite: SCM 2230 (or 164.223) (D) or SCM 3360 (or 164.336 or 118.336) (D); or consent of instructor.

**SCM 3360** Supply Chain Logistics Cr.Hrs.3 (Formerly 164.336) The course provides an international/global orientation to logistics and supply chain management. May not be held with the former 118.336 or 118.326. Prerequisite: MKT 2210 (or 118.221) (D).

### SECTION 5.42 Supply Chain Management-Supply Chain Management 4000 Level (SCM)

**SCM 4250** Beyond Business: Advanced Issues in Supply Chain Management Cr.Hrs.3 The material covered in this course moves beyond a business perspective and analyzes the relationship between supply chain management (SCM) and other parts of society as a whole. It examines the issues that arise as supply chain management interests with government and society. May not be held with the former SCM 4240 (or 164.424). Prerequisite: SCM 2230 (D); or the former 164.230 (D); or consent of instructor.



## School of Medical Rehabilitation

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**Director:** Emily Etcheverry

**Head, Department of Occupational Therapy:** Donna Collins

**Head, Department of Physical Therapy:** Jenneth Swinamer

**Head, Department of Respiratory Therapy:** Andrew West (Acting)

**Academic Staff:** Please refer to the SMR website at [umanitoba.ca/medrehab/smr\\_contact.html](http://umanitoba.ca/medrehab/smr_contact.html)

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## SECTION 1: Degree Programs Offered

1.1 Programs,

Program/Degree	Years to Complete	Total Credit Hours
Master of Occupational Therapy (M.O.T.)	Regular Program: 2 years*	107
	Accelerated Program: 1 year**	12
Master of Physical Therapy (M.P.T.)	2 years*	102
Bachelor of Medical Rehabilitation (Physical Therapy) (B.M.R.(P.T.))***	4 years (University 1 plus 3 years)	140
Bachelor of Medical Rehabilitation (Respiratory Therapy) (B.M.R.(R.T.))	Regular Program: 4 years (University 1 plus 3 years)	116
	Degree Completion Program: 5 years	30

\* Requires prior completion of a 3 or 4-year undergraduate degree.

\*\* Requires prior completion of a Bachelor of Medical Rehabilitation (Occupational Therapy) degree or equivalent.

\*\*\* The B.M.R. (P.T.) program is being phased out. The last year (Year 3) of the program will be in 2012-2013.

### 1.2 Professional Designations,

#### Master of Occupational Therapy (M.O.T.)

Graduates from the Master of Occupational Therapy Program have the degree designation M.O.T. It is important to note that occupational therapy is a regulated health

2.1 Course Requirements: Occupational Therapy

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profession, by law. To be eligible for employment in Manitoba, graduates must register with the College of



Occupational Therapists of Manitoba (COTM) and must successfully complete the Canadian Association of Occupational Therapists (CAOT) National Certification Examination. Regulations are similar in most other Canadian provinces, in that students must be registered with the regulatory body in that jurisdiction and must pass the CAOT National Certification Exam. Writing of the national exam is scheduled twice a year. The University occupational therapy department provides a list of potential MOT graduates to CAOT to verify their eligibility to write the National Certification Exam. Newly-educated occupational therapists are eligible for registration with COTM (or other provincial regulatory body) and for employment prior to convocation and/or writing the national exam, provided they have successfully completed all academic and fieldwork requirements for the MOT program, and have provided the appropriate personnel at the regulatory body with a letter of verification from the Head of the Department of Occupational Therapy (students must request these letters). For information on the registration process in Manitoba, you can visit the COTM web site at [www.cotm.ca](http://www.cotm.ca) or contact them by calling 957-1214. Other provinces have similar provisions to allow some form of registration and thus employment prior to convocation. A listing of provincial regulatory organizations is available from COTM (957-1214) and posted at SMR, or can be found at [www.caot.ca/default.asp?changeID=63&pageID=50](http://www.caot.ca/default.asp?changeID=63&pageID=50).

The Occupational Therapy program maintains accreditation through the Canadian Association of Occupational Therapists and a 7-year accreditation was received in 2012.

### Physical Therapy

Physical therapy is a regulated health profession in Canada and as such "provincial and territorial legislation stipulates that no persons other than registrants of a provincial or territorial regulator may use the titles "physical therapist", "physiotherapist" and the abbreviation "PT". The intent of the legislation is to protect the public by ensuring appropriate and authorized use of title. The granting of title is a privilege awarded to members of a regulatory jurisdiction who have demonstrated that they possess the required educational qualifications, knowledge, skills and attributes to practice their profession and are accountable for the delivery of professional services. Title provides members of the public with important information about the titleholder."

It is recommended that registered physical therapists use the title "PT" before their academic credential. "What differentiates a physical therapist as a regulated health professional is the use of title - not the fact that you have an academic degree." Excerpted from <http://manitobaphysio.com/documents/officialmarksguidelinesdec2009.pdf>

To be eligible for employment in Manitoba, graduates must register with the College of Physiotherapists of Manitoba (CPM) and must successfully complete the written component of the Canadian Alliance of Physiotherapy Regulators (The Alliance) Physiotherapy Competency Examination (PCE). To be eligible to attempt the written component of the PCE, student physical therapists must be in their last year and last term of study. There are multiple

dates available throughout the year for attempting the written component of the PCE in Winnipeg. Please refer to The Alliance website:

[http://www.alliancept.org/exams\\_candidates\\_registering.php](http://www.alliancept.org/exams_candidates_registering.php) and click on the link for the [Exam Handbook](#) for details.

Graduands of the physical therapy program (that is, those who have completed all academic requirements for graduation but have not yet convocated) will be allowed to register to practice under the mentorship of a graduate physiotherapist prior to completion of the PCE and prior to convocation from the university under the following procedure:

1. Following successful completion of all academic and clinical coursework, the Department Head, Physical Therapy will notify the College Registrar that the student has completed all of the academic requirements for graduation.
2. The new graduate will be eligible to register with the regulatory college on the Examination Candidate Register to practice under mentorship once the new graduate has:
  - a) successfully completed Part 1 (The Qualifying Examination) of the PCE;
  - b) provided evidence of professional liability insurance coverage;
  - c) completed the registration form and paid the registration fees;
  - d) provided the Registrar with the name of a currently registered physiotherapist who has agreed to serve as the applicant's mentor.
3. The graduate is expected to complete the PCE at the next available session. Once the new graduate has successfully completed Part 2 of the PCE and has provided the Registrar with a copy of his/her Baccalaureate degree, the Registrar will place the graduate's name on the Active Practice Register and the graduate will be entitled to practice independently.

For information on the registration process in Manitoba, you can visit the CPM web site at [www.manitobaphysio.com](http://www.manitobaphysio.com) or contact the office at (204) 287-8502. Other provinces have similar provisions for registration. A listing of provincial regulatory organizations is available from The Alliance website at [http://www.alliancept.org/about\\_us.php3GOVMEMBERS](http://www.alliancept.org/about_us.php3GOVMEMBERS)

The Department of Physical Therapy, University of Manitoba is seeking accreditation by Physiotherapy Education Accreditation Canada (PEAC) for the Master of Physical Therapy program. The Department has submitted a letter of intent to participate in the pre-accreditation process. The pre-accreditation process denotes an affiliation with PEAC and indicates that the education program is considering accreditation standards in its planning stages. Submission of the letter of intent and participation in the pre-accreditation



process does not assure that the program will be granted accreditation status when the final program is implemented.

The Bachelor of Medical Rehabilitation (Physical Therapy) program at the University of Manitoba was awarded ongoing accreditation status until 2015. Details about the accreditation status and report are available [here](#) (PDF).

### Bachelor of Medical Rehabilitation (Respiratory Therapy) (B.M.R.(R.T.))

Respiratory Therapists are able to work throughout Canada after graduation from a Council on Accreditation in Respiratory Therapy accredited (CoARTE) educational program and successful completion of the credentialing examination produced by the Canadian Board for Respiratory Care (CBRC). Only the Canadian Society of Respiratory Therapists (CSRT) has the right to confer the title of Registered Respiratory Therapist (RRT) by virtue of a candidate's successful completion of the national certification examinations. The examination produced by the CBRC is recognized both nationally and internationally. In order to write the CBRC examination, applicants must have graduated from a respiratory therapy educational program in Canada, which has been accredited by CoARTE. Writing of the national exam is scheduled twice a year. The University respiratory therapy department provides a list of potential program graduates to the CBRC in order to verify eligibility to write the national certification exam. Further information regarding the national certification exam can be found at <http://www.csrt.com/en/education/index.asp>.

Students admitted into the program of studies in respiratory therapy should note carefully that while the University of Manitoba, School of Medical Rehabilitation may admit students to its course of studies, the right to practice as a respiratory therapist is granted only through the appropriate authority of the province concerned, through a process of licensure. To be eligible for employment in Manitoba, graduates must register with the Manitoba Association of Registered Respiratory Therapists (MARRT). Regulations are similar in most other provinces in that the students must pass the CBRC examination and be registered with the regulatory body in that jurisdiction. Further information regarding registration in Manitoba can be found at <http://www.marrt.org/index.jsp?p=membership>. Students are highly encouraged to become student members of both provincial and national professional associations.

The Respiratory Therapy program maintains accreditation through the Council on Accreditation of Respiratory Therapy Education (CoARTE). Accreditation was most recently awarded in 2007 for a 6-year term.

## SECTION 2: Admission Requirements

The following is a summary of the admission requirements. Equivalent academic courses completed at the University of Manitoba or recognized universities elsewhere will be considered. All admission requirements, as well as application deadline dates and forms, are included in applicant information packages that are available from the

School of Medical Rehabilitation website (<http://umanitoba.ca/medrehab>). R.T. info can also be obtained from the [Admissions Office](#), Enrolment Services, 424 University Centre. This information is also posted on the university's website.

### 2.1 Course Requirements: Occupational Therapy , Regular Program

Completion of a previous undergraduate degree, minimum B average in last 60 credit hours of study, completion of all program prerequisite courses or approved alternates with no grade in prerequisites below a B. Prerequisite courses include all of the courses listed below or equivalents\* approved by the M.O.T. Admissions Committee:

Basic Statistical Analysis

Anatomy of the Human Body

Physiology of the Human Body

Minimum 3 credit hours in Psychology

Minimum 3 credit hours in Social Sciences

\*A list of prerequisite courses and equivalents is available at [www.umanitoba.ca/medrehab/ot/ot\\_prerequisite.html](http://www.umanitoba.ca/medrehab/ot/ot_prerequisite.html)

### Accelerated Option

Completion of a B.M.R.(O.T.) degree or equivalent, minimum B average in the last 60 credit hours of the degree, completion of an additional 42 credit hours of non-O.T. degree credits, and evidence of having passed the Canadian Association of Occupational Therapists (C.A.O.T.) certification examination and/or eligibility for registration in Manitoba by the College of Occupational Therapists of Manitoba (C.O.T.M.).

### 2.2 Course Requirements: Physical Therapy,

1. An accredited bachelor's degree in any area of study. Successful completion of at least 24 credit hours in one regular fall/winter session (from September to April)
2. A minimum grade point average of 3.25 in the last 60 credit hours of university-level courses
3. Equivalent IB and/or AP courses will be accepted in lieu of prerequisite courses
4. Successful completion of the Multiple Mini-Interview; interview dates will be published yearly.
5. A minimum grade of a 3.0 or a "B" in the following prerequisite courses: \*



Human Anatomy (3 credit hours)  
 Human Physiology (3 credit hours)  
 Introductory Biology with genetics content (3 credit hours)  
 Introductory Psychology (6 credit hours)  
 Childhood Psychology (3 credit hours)  
 Developmental Psychology Adolescence to Old Age (3 credit hours)  
 Introductory Statistics (3 credit hours)  
 English Literature (6 credit hours)

\*All prerequisite courses need to be completed by the fall term in the year prior to entry.

Admission criteria for the M.P.T. program can be found at:  
[http://www.umanitoba.ca/faculties/medicine/units/medrehab/pt/pt\\_mpt\\_eligibility.html](http://www.umanitoba.ca/faculties/medicine/units/medrehab/pt/pt_mpt_eligibility.html)

### 2.3 Course Requirements: Respiratory Therapy , Regular Program

BIOL 1020 and BIOL 1030 Biology 1 & 2, or both BIOL 1000 and BIOL 1010 Biology

SOC 1200 Introduction to Sociology, or PSYC 1200 Introduction to Psychology

STAT 1000 Introductory Statistics

3 credit hour course to satisfy the written English requirement

6 credit hours of electives to total 24 credit hours in University 1

#### Other requirements: Respiratory Therapy

Minimum GPA required for consideration: 3.0. Minimum GPA required in core courses: 3.0.

The written English and mathematics requirement must be satisfied in University 1. For students admitted prior to 2011, the mathematics requirement was satisfied after admission to Respiratory Therapy by required course REHB 2460.

While Respiratory Therapy does not require specific high school courses, Biology 40S and either Physics 40S or Chemistry 40S are required in order to take Biology 1: Principles and Themes (BIOL 1020), which is a required

course option for admission. English 40S and Math 40S are highly recommended.

Selection Criteria: 67% Grades and 33% Interview.

#### Degree Completion Program

In addition to the regular degree program in Respiratory Therapy, the School offers a degree completion program. Generally, individuals who have attained a diploma in respiratory therapy from an accredited program of studies in Canada, who are actively involved in the practice of the profession, and who demonstrate an interest in continuing their studies in this field, will be accepted. The degree completion program requires a minimum of 30 credit hours of study to be determined by the student in consultation with the department head and/or faculty advisor.

### SECTION 3: Faculty Academic Regulations

#### 3.1 General, Occupational Therapy

Program requirements are those of the Faculty of Graduate Studies. M.O.T. Program Supplemental Regulations are available on the School of Medical Rehabilitation website: [www.umanitoba.ca/medrehab/media/supplementary\\_regulations.pdf](http://www.umanitoba.ca/medrehab/media/supplementary_regulations.pdf)

#### Physical Therapy (M.P.T.)

Program requirements are those of the Faculty of Graduate Studies, found in the Graduate Studies Regulations section of this Calendar. M.P.T. Program Supplemental Regulations are available on the Physical Therapy, School of Medical Rehabilitation website: [http://www.umanitoba.ca/faculties/graduate\\_studies/media/Physical\\_Therapy\\_2011\\_01.pdf](http://www.umanitoba.ca/faculties/graduate_studies/media/Physical_Therapy_2011_01.pdf)

#### Physical Therapy and Respiratory Therapy

The provisions of the chapter, General Academic Regulations and Requirements, and the chapter, University Policies, apply to all students. In addition, the School of Medical Rehabilitation has regulations and requirements, published below, that apply specifically to its' students.

Policies with regard to admissions (R.T. only), selection (R.T. only), academic progression of the student, compulsory attendance, examination procedures, supplemental examination procedures, and withdrawal dates are in force and are on file in the general office of the School of Medical Rehabilitation.

#### 3.2 Health Requirements,

Students in all departments are required to provide a health history and immunization record. A student will not be permitted to attend fieldwork/clinical placements until all



health, immunization, CPR and mask fit requirements are current.

### Immunizations

Standard Health Record Form Packages are sent to new students in Occupational Therapy, Physical Therapy and Respiratory Therapy upon acceptance into the programs. New students in Occupational Therapy, Physical Therapy and Respiratory Therapy are required to return forms to their respective departments by the dates published yearly in the Health Record Form Packages. Returning students in all three programs are required annually to review and update immunizations as necessary.

### Cardiopulmonary Resuscitation Certification

All students of the Department of Occupational Therapy are required to obtain certification in cardiopulmonary resuscitation. Certification must be at the Basic Rescuer Level. New students in the program must provide proof of certification within the first 2 weeks of classes of the academic year in which they commence classes. This certification must have an issue date on or after July 1 of the year the student commences classes in the program. Second year students must provide proof of re-certification by October 1 of their second year in the program. This certification must have an issue date during or after the last week of August of the current year. Certification must remain current for all fieldwork experiences.

All students (both new and returning) in the Department of Physical Therapy are required to obtain certification in cardiopulmonary resuscitation annually. Certification must be at the Basic Rescuer Level. Proof of certification must be provided by October 1 and must not have an issue date prior to the last week of August of the current year. This will ensure that the certification remains current until the end of the clinical placement period for each year of the program.

All students (both new and returning) in the Department of Respiratory Therapy are required to obtain Heart and Stroke Foundation of Canada certification in cardiopulmonary resuscitation annually. Certification must be at the Basic Life Support (BLS) for Healthcare Providers. Students in year 1 and 2 of the program will be required to provide proof of certification by September 1. Students in year 3 of the program will be required to provide proof of certification before the first day of their fieldwork placement. For students in all years of the program, proof of certification must not have an issue date prior to the last week in June of the current year. This will ensure that the certification remains current until the end of the clinical education period for each year in the program.

### Mask Fit Certification

Clinical/fieldwork education sites require students to maintain mask fit certification. Information on acquiring this certification is provided to new students with the Health

Record Form Packages. All students are required to maintain mask fit certification throughout the program.

### 3.3 Dean's Honour List, Undergraduate Students (Physical Therapy and Respiratory Therapy)

Students carrying a full course load, with a sessional Grade Point Average of 3.7 or higher and have not done resit or supplemental exams, are placed on the Dean's Honour List.

### 3.4 Attendance,

Regular attendance is expected of all students in all courses. Prior permission is required for any anticipated absences. Students absent from class due to illness may be required to present a certificate from a physician. Unexcused absence from an examination may result in a grade of zero for that examination. Make-up examinations may be allowed under special circumstances.

### 3.5 Criminal Record Check and Child Abuse Registry Check,

Students are advised that clinical/fieldwork education sites require that students complete a Criminal Record Check and a Child Abuse Registry Check.

New students in the Master of Occupational Therapy program must provide results of a Child Abuse Registry Check and a Criminal Record Check (including a vulnerable sector screen) within the first 2 weeks of classes of the academic year in which they commence classes. Both checks must have an issue date after July 1 of the year the student commences classes in the program. Second year students must provide updated results by October 1 of their second year in the program. Both checks must have an issue date during or after the last week of August of the current year.

All physical therapy students are required to obtain a formal Criminal Record Check and a formal Child Abuse Registry Check by October 1 of each year of the program. Both documents must not have an issue date prior to the last week of August of the current year, to ensure that they remain current until the end of the clinical placement period for each year of the program. Additionally, new students are required to complete a criminal record self-declaration form at the time of application to the program.

All respiratory therapy students are required to obtain a formal Criminal Record Check and a formal Child Abuse Registry Check by the first day of classes of each year of the program. These records must have been issued within the ninety (90) days previous to that date to ensure that they remain current until the end of the clinical education period for each year of the program.

## SECTION 4: Program and Graduation Requirements



#### 4.1 Academic Education, Physical Therapy (B.M.R.(P.T.))

Course No.		Credit Hours
<b>First Year</b>		
Not offered in 2012-2013		
REHB 1200	Basic Clinical Sciences	3
REHB 1480	Human Anatomy – Systems	3
REHB 1520	Musculoskeletal Anatomy	5
PT 1700	Psychosocial Issues	6
PT 1730	Physical Therapy Management	10
PT 1740	Cardiorespiratory Clinical Education	7
PT 1750	Rehabilitation Exercise 1	6
PT 1910	Pathology and Clinical Manifestations	5
Total credit hours		45
<b>Second Year</b>		
Not offered in 2012-2013		
REHB 2410	Pathology and Clinical Manifestations	4
REHB 2450	Research Methodology for Medical Rehabilitation	3
REHB 2460	Statistics	3
PT 2720	Electro-Physical Agents in Physical Therapy Management	3
PT 2750	Rehabilitation Exercise 2	2
PT 2760	Orthopedic Assessment and Management 1	6
PT 2770	Orthopedic Assessment and Management 2	6
PT 2780	Musculoskeletal Clinical Education	10
PT 2790	Physical Therapy Management of Musculoskeletal Disorders	8
PT 2890	Rehabilitation Biomechanics	3
Total credit hours		48
<b>Third Year</b>		
REHB 3410	Pathology and Clinical Manifestations of Neurological Conditions	3
REHB 3460	Introduction to Health Care Administration and Management	3
REHB 3930	Neuroanatomy	3
REHB 3940	Neurosciences	3
PT 3730	Advanced Musculoskeletal Topics	3
PT 3740	Intergrated Tutorials	3
PT 3750	Physical Therapy Neurological Interventions Across the Lifespan 1	6
PT 3760	Physical Therapy Neurological Interventions Across the Lifespan 2	7
PT 3880	Clinical Education in Neurological Disorders	8
PT 3920	Summer Internship	8
Total credit hours		47
Students may not obtain any grade lower than "C" in all required courses.		

#### Respiratory Therapy

Course No.		Credit Hours
<b>First Year</b>		
ANAT 1030	Human Anatomy	3
PHGY 1030	Fundamentals of Medical Physiology	6
RESP 1270	Respiratory Anatomy and Physiology	3
RESP 1280	Medical Microbiology and Disease Transmission	2
RESP 1290	Cardiopulmonary Pharmacology	2
RESP 1320	Applied Sciences for Respiratory Therapy	3
RESP 1330	Technical Aspects of Respiratory Therapy	3
RESP 1360	Treatment Administration in Respiratory Care	3
RESP 1370	Ventilatory Support Principles	6
RESP 1380	Basic Fieldwork 1	4
Total credit hours		35



**Second Year**

REHB 2450	Research Methodology for Medical Rehabilitation		3
RESP 2300	Respiratory Clinical Assessment		6
RESP 2310	Clinical Aspects of Ventilatory Management		3
RESP 2320	Ventilatory Support Instrumentation		6
RESP 2330	Pulmonary Investigations		3
RESP 2340	Physiologic Measurements and Instrumentation		3
RESP 2350	Cardiology		3
RESP 2360	Pediatrics		3
RESP 2370	Anesthesiology		3
RESP 2380	Basic Fieldwork 2	4	
RESP 2390	Clinical Integration and Simulation	6	
Total credit hours			43

**Third Year**

REHB 3460	Introduction to Health Care Administration and Management		3
RESP 3300	Seminars in Respiratory Care		3
RESP 3310	Clinical Education in Intensive Care		10
RESP 3320	Clinical Education in Pediatric Respiratory Care		3
RESP 3330	Clinical Education in Neonatal Respiratory Care		4
RESP 3340	Clinical Education in Maternal/Fetal Health		1
RESP 3350	Clinical Education in Pulmonary Diagnostics		3
RESP 3360	Clinical Education in Anesthesia		3
RESP 3370	Clinical Education in Community Care		4
RESP 3380	Clinical Education in Respiratory Care		4
Total credit hours			38

Students may not obtain any grade lower than "C" in all required courses.

**4.2 Clinical/Fieldwork Education, Occupational Therapy**

See University of Manitoba Graduate Calendar for descriptions of courses in the Master of Occupational Therapy (M.O.T.) program.

**Physical Therapy (M.P.T.)**

See University of Manitoba Graduate Calendar for descriptions of courses in the Master of Physical Therapy (M.P.T.) program.

**Physical Therapy (B.M.R.(P.T.))**

1,200 full-time hours of clinical/practical experience are required. Clinical placements are conducted from January to March for the first year of the program, and from March to August for the second and third years of the program. Placements occur primarily in locations in Manitoba, Saskatchewan, northwest Ontario and Kivalliq Region of Nunavut. Students are advised to take into account the financial implications of the summer placement requirements of the B.M.R.(P.T.) program. All students should be prepared to be placed outside of Winnipeg for a minimum of one placement.

**Respiratory Therapy**

1,560 full-time hours of clinical/fieldwork experience are required. 160 hours of clinical education time is organized into one-week blocks that occur at four intervals throughout years one and two of the B.M.R.(R.T.) program. The

remaining 1,400 hours of clinical education is conducted throughout year three. All placements occur in Manitoba, with the majority of these occurring within greater Winnipeg.

**SECTION 5: -Occupational Therapy**

**OT 4130 Re-Entry Fieldwork Cr.Hrs.8**

(Formerly 168.413) Self-directed period of fieldwork preparation followed by a seven-week fieldwork education experience under the supervision of a licensed occupational therapist. Course evaluated on a pass/fail basis. Prerequisites: an earned degree in occupational therapy, permission of Head of Department of Occupational Therapy.

**SECTION 5: -Physical Therapy**

**PT 1700 Psychosocial Issues Cr.Hrs.6**

(Formerly 167.170) A general course to provide an overview of psychosocial behaviour and the implication for physiotherapy practice. 75 hours.

**PT 1730 Physical Therapy Management Cr.Hrs.10**

(Formerly 167.173) A theory and practical course on applying physical therapy techniques to patients with cardio and respiratory disorders. 166 hours.

**PT 1740 Cardiorespiratory Clinical Education Cr.Hrs.7**

(Formerly 167.174) Consists of an introductory period of clinical practice and specific practice related to the management of cardiorespiratory conditions. Course evaluated on a pass/fail basis. 245 hours.

**PT 1750 Rehabilitation Exercise 1 Cr.Hrs.6**

(Formerly 167.175) Consists of lecture, tutorials, and



practical sessions focused on topics of exercise physiology, fitness testing and training and rehabilitation exercise skills related to the healthy adult and selected patient populations. 105 hours.

**PT 1910** Pathology and Clinical Manifestations Cr.Hrs.5  
(Formerly 167.191) A theory course including the basic principles of pathology and microbiology; the natural history, pathology, clinical manifestations, management and prognosis of patients with disorders of the cardiovascular and respiratory systems. Corequisite: REHB 1200 (or 068.120). 83 hours.

**PT 2720** Electro-Physical Agents in Physical Therapy Management Cr.Hrs.3  
(Formerly 167.272) Selection and application of electro-physical agents in physical therapy. 45 hours.

**PT 2750** Rehabilitation Exercise 2 Cr.Hrs.2  
(Formerly 167.275) A lecture and lab based course which focuses on the development of comprehensive rehabilitation, health, and fitness exercise programs for normal subjects, clients with specific conditions/disabilities, and athletes. 34 hours.

**PT 2760** Orthopedic Assessment and Management 1 Cr.Hrs.6  
(Formerly 167.276) Integrated approach to the orthopedic assessment and management of upper limb, lower limb, and spinal disorders. 113 hours.

**PT 2770** Orthopedic Assessment and Management 2 Cr.Hrs.6  
(Formerly 167.277) Integrated approach to the physiotherapy assessment and management of upper limb, lower limb, and spinal disorders. Successful completion of PT 2760 (or 167.276) and PT 2770 (or 167.277) equivalent to E2/V2 level of professional classification. 112 hours.

**PT 2780** Musculoskeletal Clinical Education Cr.Hrs.10  
(Formerly 167.278) Consists of a period of clinical practice related to the management of musculoskeletal conditions. Course evaluated on a pass/fail basis. 375 hours.

**PT 2790** Physical Therapy Management of Musculoskeletal Disorders Cr.Hrs.8  
(Formerly 167.279) A theory and practical course on physical therapy management of patients with specific disorders. 150 hours.

**PT 2890** Rehabilitation Biomechanics Cr.Hrs.3  
(Formerly 167.289) Theory and practical application of biomechanics of human movement in relation to rehabilitation. Prerequisites: REHB 1480 (or 068.148), REHB 1490 (or 068.149) and REHB 1500 (or 068.150), or equivalent. 40 hours.

**PT 3730** Advanced Musculoskeletal Topics Cr.Hrs.3  
(Formerly 167.373) A theory, practical and tutorial-based course designed to provide the opportunity for problem-solving through the integration of relevant information, in the areas of orthopedic and sports physiotherapy. 61 hours.

**PT 3740** Integrated Tutorials Cr.Hrs.3  
(Formerly 167.374) A theory, practical and tutorial-based course designed to provide the opportunity for problem-solving through the integration of relevant information, in the

physiotherapy management of geriatric, women's health, and multi-system conditions. 41 hours.

**PT 3750** Physical Therapy Neurological Interventions Across the Lifespan 1 Cr.Hrs.6  
(Formerly 167.375) A theory and practical course on the basic principles of the application of techniques used in the Physical Therapy management of clients with neurological conditions, with a focus on neurological assessment and the treatment for spinal cord injured clients and clients with certain neurological conditions. 108 hours.

**PT 3760** Physical Therapy Neurological Interventions Across the Lifespan 2 Cr.Hrs.7  
(Formerly 167.376) A theory and practical course on the basic principles of the application of techniques used in the Physical Therapy management of clients with neurological conditions, with a focus on neurological treatment. 115 hours.

**PT 3880** Clinical Education in Neurological Disorders Cr.Hrs.8  
(Formerly 167.388) Consists of a period of clinical practice related to the management of neurological conditions. Course evaluated on a pass/fail basis. 300 hours.

**PT 3920** Summer Internship Cr.Hrs.8  
(Formerly 167.392) An eight-week period of clinical/practical experience under the direction and supervision of registered physiotherapists. Course evaluated on a pass/fail basis. 300 hours.

## SECTION 5: -Medical Rehabilitation

**REHB 1200** Basic Clinical Sciences Cr.Hrs.3  
(Formerly 068.120) A lecture and tutorial course covering basic physiology related to membrane, muscle, pain and the cardiovascular, respiratory, endocrine, and immune systems. 50 hours.

**REHB 1480** Human Anatomy - Systems Cr.Hrs.3  
(Formerly 068.148) Lecture and laboratory study of the microscopic and macroscopic structure of the major systems of the human body. Living anatomy of the cardiorespiratory system. 90 hours.

**REHB 2410** Pathology and Clinical Manifestations Cr.Hrs.4  
(Formerly 068.241) A theory course including the basic principles of pathology and clinical manifestations, management and prognosis of patients with musculoskeletal disorders. Prerequisite: PT 1910 (or 167.191). 60 hours.

**REHB 2450** Research Methodology for Medical Rehabilitation Cr.Hrs.3  
(Formerly 068.245) A theory and practical course designed to provide a basic understanding of research principles and their application in Medical Rehabilitation. 45 hours.

**REHB 2460** Statistics Cr.Hrs.3  
(Formerly 068.246) A theory and practical course designed to provide a basic understanding of statistics with application to Medical Rehabilitation. 45 hours.

**REHB 3410** Pathology and Clinical Manifestations of Neurological Conditions Cr.Hrs.3  
(Formerly 068.341) Theoretical study of neurological



pathology and clinical manifestations of the basic principles of medical management of persons with neurological disorders. Prerequisite: REHB 2410 (or 068.241). 37 hours.

**REHB 3460** Introduction to Health Care Administration and Management Cr.Hrs.3  
(Formerly 068.346) An introduction to professional and administrative issues of current concern to respiratory and physical therapists. Topics to be covered in lecture and seminar format are health care systems, professional ethics, departmental administration, principles of supervision, and medical and legal responsibilities. 39 hours.

**REHB 3930** Neuroanatomy Cr.Hrs.3  
(Formerly 068.393) The study of neuroanatomy and neurophysiology of the human body. 47 hours.

**REHB 3940** Neurosciences Cr.Hrs.3  
(Formerly 068.394) The study of neuroanatomy and neurophysiology of the human body. 45 hours.

## SECTION 5: -Respiratory Therapy

**RESP 1270** Respiratory Anatomy and Physiology Cr.Hrs.3  
(Formerly 169.127) Principles of pulmonary mechanics, ventilation, diffusion, perfusion, ventilation-perfusion relationships, gas transport, control of ventilation, and acid-base physiology. 60 hours.

**RESP 1280** Medical Microbiology and Disease Transmission Cr.Hrs.2  
(Formerly 169.128) Introduction to Medical Microbiology with emphasis on common pathogens, disease transmission, principles of asepsis, isolation sterilization and disinfection procedures. 32 hours.

**RESP 1290** Cardiopulmonary Pharmacology Cr.Hrs.2  
(Formerly 169.129) Pharmacology principles, phases of drug events, factors modifying drug effect, drug preparation, individual pharmacologic agents including: ANS drugs, CNS drugs, cardiac medications, respiratory medications, antibiotics. 36 hours.

**RESP 1320** Applied Sciences for Respiratory Therapy Cr.Hrs.3  
(Formerly 169.132) Gas laws, unique behaviour of specialty gases, fluid dynamics, fundamental principles of electricity, electronics and electrical safety, concepts of basic and advanced chemistry not treated in REHB 1200 (or 068.120). 53 hours.

**RESP 1330** Technical Aspects of Respiratory Therapy Cr.Hrs.3  
(Formerly 169.133) Medical gas and supply systems, flowmetering devices, regulators, medical gas outlets, vacuum systems, regulatory authorities on the supply, production and distribution of medical gases. 45 hours.

**RESP 1360** Treatment Administration in Respiratory Care Cr.Hrs.3  
(Formerly 169.136) Administration of medical gases, humidity and aerosol therapy, environmental therapy, positive pressure breathing devices, respiratory exercises, incentive spirometries and bedside spirometry. 50 hours.

**RESP 1370** Ventilatory Support Principles Cr.Hrs.6  
(Formerly 169.137) Physical principles of continuous ventilatory support including: physics of ventilator operation and physiological aspects of ventilatory support. Provides a framework for RESP 2310 (or 169.231) and RESP 2320 (or 169.232). 120 hours.

**RESP 1380** Basic Fieldwork 1 Cr.Hrs.4  
A seminar based preparatory period, followed by 80 hours of clinical fieldwork experiences in respiratory therapy, delivered with concurrent tutorial and laboratory based learning opportunities. The field work portion will be provided under the supervision of registered respiratory therapists at one or more approved clinical sites. Course is evaluated on a pass/fail basis.

**RESP 2300** Respiratory Clinical Assessment Cr.Hrs.6  
(Formerly 169.230) The correlation of patho-physiological mechanisms with the clinical manifestations of the common respiratory diseases and how rational management evolves from this understanding. 90 hours.

**RESP 2310** Clinical Aspects of Ventilatory Management Cr.Hrs.3  
(Formerly 169.231) Lecture, seminar and laboratory simulation on adult and pediatric ventilatory management. Estimation of ventilatory requirements, ventilator selection, weaning, ventilatory adjuncts, transport, and long term ventilatory support. 45 hours.

**RESP 2320** Ventilatory Support Instrumentation Cr.Hrs.6  
(Formerly 169.232) Comprehensive review of the components, operation and use of specified adult, pediatric and neonatal mechanical ventilators. Classroom and laboratory sessions. 180 hours.

**RESP 2330** Pulmonary Investigations Cr.Hrs.3  
(Formerly 169.233) Lung function testing principles and procedures including: static and dynamic measures, determination of volumes and capacities, exercise physiology. An analysis of lung function changes relative to common disease physiology. 50 hours.

**RESP 2340** Physiologic Measurements and Instrumentation Cr.Hrs.3  
(Formerly 169.234) Acid base physiology, interpretation of physiologic values, design theory, operation and care of gas analyzing devices, oximetry, capnography. 45 hours.

**RESP 2350** Cardiology Cr.Hrs.3  
(Formerly 169.235) Aspects of clinical assessment of the cardiovascular system, pathophysiology and selected treatment regimens and modalities. Laboratory on rhythm analysis and aspects of advanced cardiac life support. 60 hours.

**RESP 2360** Pediatrics Cr.Hrs.3  
(Formerly 169.236) Normal physiology, diseases and treatment, the child in hospital environment, high risk neonates, principles of intensive care, pediatric emergencies and fetal and maternal medicine. 60 hours.

**RESP 2370** Anesthesiology Cr.Hrs.3  
(Formerly 169.237) Principles of anesthesia, airway management, pain management, anesthetic agents, function of the anesthesia machine, pre- and postoperative assessment, recovery and safety features in the operating



room. 45 hours.

**RESP 2380** Basic Fieldwork 2 Cr.Hrs.4

Building on RESP 1380 (Basic Fieldwork1) and RESP 2390 (Clinical Integration and Simulation), this course is comprised of fieldwork experiences which provide the student the opportunity to apply the integrated concepts learned in the first two years of the Respiratory Therapy program in a clinical setting. This course will prepare students for advanced clinical education coursework. Prerequisites: RESP 1380, RESP 2390.

**RESP 2390** Clinical Integration and Simulation Cr.Hrs.6

This course provides the student an opportunity to integrate concepts learned in the first two years of the Respiratory Therapy program, and to learn life support protocols prior to participation in advanced clinical education coursework. The course will be delivered through a variety of formats including classroom, seminar, and clinical simulation. Prerequisite: This course is restricted to students registered in year two of the Bachelor of Medical Rehabilitation in Respiratory Therapy program who have completed all required courses for year one of the program.

**RESP 3300** Seminars in Respiratory Care Cr.Hrs.3

(Formerly 169.330) A series of seminars on Respiratory Disease and other clinical topics designed to bring together practical and theoretical aspects of the program. 60 hours.

**RESP 3310** Clinical Education in Intensive Care Cr.Hrs.10

(Formerly 169.331) This course consists of 10 weeks of clinical experience in the adult intensive care setting in an approved clinical site. Course evaluated on a pass/fail basis. 432 hours.

**RESP 3320** Clinical Education in Pediatric Respiratory Care Cr.Hrs.3

(Formerly 169.332) Three weeks of clinical experience in the Pediatric Intensive Care Unit at Children's Hospital. Shiftwork and extended shifts may be required. Course evaluated on a pass/fail basis. 144 hours.

**RESP 3330** Clinical Education in Neonatal Respiratory Care Cr.Hrs.4

(Formerly 169.333) Four weeks of clinical experience in the Neonatal Intensive Care Unit at Children's Hospital and/or St. Boniface General Hospital. Shiftwork and extended shifts may be required. Course evaluated on a pass/fail basis. 180 hours.

**RESP 3340** Clinical Education in Maternal/Fetal Health Cr.Hrs.1

(Formerly 169.334) One week of clinical experience in maternal and fetal health at the Women's Centre, Health Sciences Centre. Course evaluated on a pass/fail basis. 36 hours.

**RESP 3350** Clinical Education in Pulmonary Diagnostics Cr.Hrs.3

(Formerly 169.335) Three weeks of clinical experience in the pulmonary diagnostic laboratory of an approved clinical site. Course evaluated on a pass/fail basis. 144 hours.

**RESP 3360** Clinical Education in Anesthesia Cr.Hrs.3

(Formerly 169.336) Three weeks of clinical experience designed to acquaint the student with actual clinical techniques and procedures used in the operating and

recovery room. Course evaluated on a pass/fail basis. 144 hours.

**RESP 3370** Clinical Education in Community Care Cr.Hrs.4 (Formerly 169.337) Four weeks of clinical experience in community care settings including: pre-hospital care, health and wellness promotion, interfacility transport, chronic care, home care and community outreach. Course evaluated on a pass/fail basis. 180 hours.

**RESP 3380** Clinical Education in Respiratory Care Cr.Hrs.4 (Formerly 169.338) Four weeks of clinical experience spent in the non-intensive care setting working with a variety of medical and surgical patients. Course evaluated on a pass/fail basis. 180 hours.



## Faculty of Medicine

**Dean:** Brian Postl

**Associate Dean(s):** Associate Dean (Undergraduate): Ira Ripstein  
Associate Dean (Professionalism & Diversity): Samia Barakat  
Associate Dean (Students): Bruce Martin

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### SECTION 1: Medical Education

#### 1.1 Mission Statement,

The Mission of the Faculty of Medicine is to develop and deliver high quality educational programs for undergraduate and postgraduate students of medicine and medical rehabilitation, for graduates and post-doctoral fellows in the basic medical sciences and for physicians in practice; conduct research and other scholarly inquiry in the basic and applied medical sciences; and, contribute to the improvement of health status in Manitoba and beyond by providing advice, disseminating information to health professionals and the public, and by cooperating in the planning for the development and delivery of health care services.

The Mission of the Undergraduate Medical Education Program is to provide an environment which will assist students to become competent, caring, ethical physicians with the ability to think critically. This experience will prepare students to choose their area of training wisely, to successfully continue their education, and subsequently to meet responsibilities to their patients and society.

Medical education in Manitoba is designed to provide students with the knowledge and experience they need to practise medicine in a profession where new developments



in science and public health policy create an ever-changing environment. In the first two years of the program the subject matter is divided into blocks which cover core concepts in health and medicine, human development and body systems. Clinical Skills, Problem Solving, Medical Humanities, Laboratory and Investigative Medicine, and Survival Tactics are integrated into the six blocks. The final two years, called the “clerkship” are spent in direct contact with patients and doctors in a clinical setting in which students gain experience with increasing responsibility for patient care and management.

### 1.2 History of Faculty,

Medical education in Manitoba had its beginnings in 1883 when 13 physicians applied to the local legislature for a charter to form the Manitoba Medical College. The college was chartered as an affiliate of the University of Manitoba. The number of students registered for the first session was 15, and the number in attendance at each session from that date to the present has ranged from 15 to 440. The university came to the aid of the Medical School from time to time by furnishing full-time professors in chemistry, physiology, pathology, bacteriology, and zoology. With the session of 1918-1919 the Manitoba Medical College ceased to exist as a separate institution. It made a gift of all its property and equipment to the University of Manitoba “on condition that the university establish a Faculty of Medicine, and carry on the work of medical education in an efficient manner.”

In 1921, a building for the accommodation of the departments of Physiology, Biochemistry, and Bacteriology was erected on the old Medical School property, and a further unit was completed in February, 1922. In January, 1956, the new wing of the medical building was officially opened, which included new quarters for the Medical Library. In February, 1965, the Chown Building was opened providing five-stories of administration offices and space for Pharmacology and Therapeutics and the Computer Department for Health Sciences. The Basic Medical Sciences Building, containing undergraduate teaching facilities, opened in 1973. It provides accommodation for anatomy, biochemistry, physiology, and medical microbiology. The Brodie Centre officially opened in the spring of 1996; it provides a library, research and recreational facilities. In 2004, the Office of the Dean and the Education Offices relocated to new administrative facilities in the Brodie Centre. General teaching facilities are located in the medical buildings, and facilities for clinical instruction are provided in the teaching hospitals affiliated with the University of Manitoba and in related institutions. The varied settings in which medicine is practised in Winnipeg and in rural and northern Manitoba also provide students with the opportunity to study community medicine outside the major teaching institutions.

### 1.3 Neil John Maclean Health Sciences Library,

The Neil John Maclean Health Sciences Library provides access to a wide range of evidence-based medicine resources in print and electronic format. Online resources include core medical textbooks such as *Harrison's Principles of Internal Medicine*, drug reference resources such as *Lexi-Comp*, and clinical point of care tools such as

*UptoDate*, *First Consult*, *MD-Consult*, and *Access Medicine*. The Library subscribes to over 4,500 online journals and the articles in this collection are dynamically linked from important medical databases such as PubMed, EMBASE, and Scopus. Students can access all of the online resources on-campus using the Bannatyne campus wireless network and from home with a student ID number and password. The Library's facilities include 12 seminar rooms, which can be booked by students for group study, 92 study carrels, and 32 computers for walk-in use. Librarians offer training on the use of key medical resources and information management both as part of the curriculum and in regularly scheduled sessions throughout the year.

### 1.4 Graduate Studies,

Graduate Studies information about graduate studies in medicine or related sciences, and information regarding opportunities for medical research may be obtained from: The Assistant Dean (Graduate Studies and Research), Faculty of Medicine, University of Manitoba, A108 Chown Building, 753 McDermot Avenue, Winnipeg, MB, R3E 0W3.

More than 300 graduate students are doing research and pursuing Masters and Doctoral degree programs in the Faculty of Medicine. Their research training programs offer opportunities to conduct research at a number of sites including Bannatyne Campus, the National Virology Lab, St. Boniface Research Centre, and the Institute for BioDiagnostics. Graduate programs are available in the Departments of Anatomy, Biochemistry and Medical Genetics, Community Health Sciences, Immunology, Medical Microbiology, Pathology, Pharmacology, Physiology, and Surgery.

### 1.5 Physician Assistant Education Program,

The Physician Assistant Education Program is the first graduate-level program for Physician's Assistant education in Canada. Upon completion of the comprehensive two year program, graduates receive a Master of Physician Assistant Studies degree. The program aims to educate outstanding Physician Assistant clinicians, to advance the academic field of the profession, and to foster leaders who will serve their communities and advance the physician assistant profession in Manitoba and Canada.

### 1.6 Department of Medical Education,

The mandate of the Department of Medical Education is to work in a collaborative manner across all programs and schools within the Faculty of Medicine to provide expertise and services related to medical education including: curriculum development, faculty development, design of evaluation tools and assessment strategies and the provision of standardized patients. The second purpose of the department of Medical Education is to engage in research and scholarly activity related to medical education and serve as an academic home for faculty with primary appointments within medical education.

### 1.7 Continuing Professional Development,



This office is responsible for the Continuing Professional Development programs of the faculty, which are conducted in the Medical School, teaching hospitals, and in urban and rural medical centres. Information regarding programs may be obtained from: The Office of Continuing Professional Development, Faculty of Medicine, University of Manitoba, S203-753 McDermot Avenue, Winnipeg, MB R3E 0W3.

[http://umanitoba.ca/faculties/medicine/media/Essential\\_Skills\\_and\\_Abilities\\_for\\_Admissions\\_Promotion\\_and\\_Graduation.pdf](http://umanitoba.ca/faculties/medicine/media/Essential_Skills_and_Abilities_for_Admissions_Promotion_and_Graduation.pdf)

- Accommodation Policy; the Faculty of Medicine supports individuals with disabilities who may require accommodation to meet the requisite skills and abilities; the policy can be found at the following link:

<http://umanitoba.ca/faculties/medicine/>

- Proficiency in English Language; all applicants whose primary language is other than English must demonstrate proficiency in the English language; please contact Enrolment Services at the University of Manitoba;
- Adult Criminal Record and Child Abuse Registry Checks; all applicants must complete a self-declaration regarding adult criminal records, pending criminal charges and registration on the child abuse registry as an offender; this self-declaration must be done at the time of application; an adult criminal record check, declaration of pending criminal charges and child abuse registry self-check are required at the time of registration and annually thereafter;
- Professional Registration; all medical students must be eligible for, and become registered with the College of Physicians and Surgeons of Manitoba (CPSM) by the time of registration; eligibility requirements can be viewed on the CPSM website at: [www.cpsm.mb.ca](http://www.cpsm.mb.ca);
- All applicants must have participated and been successful in the Multiple Mini Interview (MMI).

## SECTION 2: Admission to the Faculty of Medicine

The Applicant Information Bulletin is the official policy document for Admission. The document can be found at: [www.umanitoba.ca/student/admissions/media/medicine\\_bulletin.pdf](http://www.umanitoba.ca/student/admissions/media/medicine_bulletin.pdf)

### 2.1 Degree Offered, Doctor of Medicine (M.D.)

Minimum time to graduation: Four years in the Faculty of Medicine following an undergraduate degree.

### 2.2 Eligibility Requirements for Admission,

Refer to the Applicant Information Bulletin for the eligibility requirements:

<http://umanitoba.ca/faculties/medicine/admissions/applying.html>

All applicants must meet the following eligibility requirements:

- Canadian citizen or permanent resident of Canada;
- Bachelor's degree no later than June 30, 2013 from a university recognized by the University of Manitoba
- A minimum of 6 credit hours in Biochemistry at the university level with a minimum grade of C; applicants should refer to the Acceptable Biochemistry Course Combinations spreadsheet found on the Admissions website:

<http://umanitoba.ca/faculties/medicine/admissions/info.html#3>  
[Eligibility Requirements To Apply](#)

Credit hours in the humanities/social sciences;

- Medical College Admission Test (MCAT); the MCAT is administered by the AAMC and further information can be found at:

[www.aamc.org](http://www.aamc.org) ;

- Adjusted Grade Point Average (AGPA) of 3.30 or higher;
- Technical Standards Requirement; the Faculty of Medicine has identified the requisite skills and abilities for admission, promotion and graduation in the MD program; these can be found at the following link:

### 2.3 Eligibility Requirements for Transfer,

Applications for transfer are only accepted from students registered and in good standing at an LCME accredited medical school. Transfers can only be considered if there is a seat available through attrition. Details regarding the transfer policy can be found at the following link: [http://umanitoba.ca/faculties/medicine/alumni/media/Transfer\\_Policy.pdf](http://umanitoba.ca/faculties/medicine/alumni/media/Transfer_Policy.pdf).

### 2.4 Immunization Requirements,

Immunization requirements can be viewed at:

<http://umanitoba.ca/faculties/medicine/education/undergraduate/immunestatus.html>.

### 2.5 Certification in Cardio-Pulmonary Resuscitation (CPR),

Students must have CPR designated as "Health Care Provider Level C" acceptable to the standards of the Heart and Stroke Foundation at the time of registration in Year 1. Students must have annual renewal of their CPR registration acceptable to the standards of the Heart and Stroke Foundation throughout the Undergraduate Medical Education program. Evidence of current renewal must be provided on an annual basis prior to the beginning of the



academic year. Failure to comply, may result in exclusion from all academic programs until renewal is obtained.

### SECTION 3: Academic Regulations

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. Faculty of Medicine regulations and requirements change from time to time. Detailed information concerning the general regulations governing admissions, evaluation, academic progress and withdrawal for an undergraduate medical student may be obtained from the Undergraduate Medical Education Office. These regulations include the following:

- A student will not be permitted to register unless the student is in good academic and financial standing from the previous year.
- No student may repeat more than one year, and no year may be repeated more than once except by special permission of the Faculty Executive Council or Progress Committee.
- A student who withdraws from the Faculty of Medicine without prior written notice will be considered to have terminated connection with the Faculty and will not be eligible for re-admission.
- A student who withdraws from the Faculty having given due notice of intention to withdraw is eligible for re-admission. If re-admission is approved the student will be required to conform to the rules and regulations, fee schedules, sequence of courses, in effect at the time of such readmission.
- A student may, after completion of the work of a full year, be granted a leave of absence for one year subject to certain conditions related to the purpose of the leave of absence and on subsequent registration will be required to conform to the rules and regulations, fee schedules, and sequence of courses in effect at the time of such registration.
- A student who has been or expects to be prevented from attending any regular examination by reason of illness or other cause beyond the student's control should at once notify the Associate Dean, Students and must abide by the requirements of the Deferred Examination Policy and Procedures found at:

[http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/DeferredExamination.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/DeferredExamination.pdf).

- The Faculty Executive Council reserves the right to require a student to withdraw from the program for which the student is enrolled when it believes the student to be unsuited, on general considerations of scholarship, or conduct for the profession, or the field within the profession, to which the program of studies normally leads. This right prevails notwithstanding any other provision in the faculty regulations.

- Each student is required to present the personal and professional appearance, attitudes and behaviours expected of members of the medical profession. The Faculty of Medicine has a process through which lapses in professionalism are reported, investigated, and, when necessary, will result in remedial or punitive actions up to and including dismissal. The Faculty of Medicine Professionalism website provides additional information:

<http://umanitoba.ca/faculties/medicine/education/undergraduate/professionalism.html>.

- The Faculty of Medicine has a Conscientious Objection Policy through which medical students may request exemption from participation in specific medical procedures or services. Requests are evaluated and, if granted, do not absolve students from the following aspects of the procedure or service in question, including: cognitive knowledge (indications, contraindications, benefits and risks); full and nonselective disclosure to support Informed Consent by patients; patient non-abandonment; appropriate patient referral; and non-discrimination. A full list of criteria can be found on the Conscientious Objection application form. A Conscientious Objection cannot limit a student's educational experience such that the student's overall medical education will be compromised and all affected curricular time must be made up otherwise. For information, contact the Undergraduate Medical Education Office.
- Each student must complete the undergraduate program for the M.D. degree of the Faculty of Medicine within six years of entry to first-year Medicine, exclusive of those students undertaking additional academic pursuits which are acceptable to the Progress Committee or whose progress is delayed by medical illness. When a student fails to complete the program Progress Committee will review the academic record of the student. If the student is in good academic standing at that time, the committee may grant one further year for the completion of the program. The reasons for the prolonged duration of the student's program are confidential but must be approved as valid by the Associate Dean, UGME.

#### 3.1 Requirements for the Degree of Doctor of Medicine (M.D.)

Every candidate for the degree of Doctor of Medicine must have satisfied the following requirements:

- Subsequent to the successful completion of the required university studies, a student must have attended four full sessions of not less than nine months each in this or some other school of medicine approved by the University of Manitoba,



the last two years of which must have been spent as a student of the University of Manitoba.

- A student must have completed the required work, have fulfilled satisfactorily all special requirements, have received satisfactory grades throughout the entire medical program, and have discharged all indebtedness to the university.

Degrees: All degrees in Medicine will be conferred by the Senate of the university on the recommendation of the Faculty Executive Council at a regular meeting of the University Senate or at a meeting specially called for that purpose.

### 3.2 Requirements for Registration to Practise Medicine,

A university degree in medicine does not in itself confer the right to practice the profession of medicine in Canada. That right is obtained from a provincial registering body in the particular province in which the graduate desires to practice, and follows the successful completion of the Medical Council of Canada's two qualifying examinations.

#### 3.2.1 Federal Registration: The Medical Council of Canada

The Medical Council of Canada was established in 1912 by the Canada Medical Act. Its purpose is to grant a qualification to practice medicine acceptable for license in every province of Canada. It is not a licensing body, but "anyone who secures the diploma of the Medical Council of Canada by examination is registered on the Canadian Medical Register. This registration entitles one to become licensed to practice medicine in any province in Canada upon payment of the necessary fee and on meeting other provincial requirements."

The Medical Council of Canada examinations are normally taken by undergraduate medical students of the University of Manitoba at the end of the fourth year. There is a fee for this examination. Examinations are held annually in Winnipeg in May and November, and registration for these examinations may be made with The Registrar, Medical Council of Canada, 2283 St. Laurent Boulevard, Ottawa, ON K1G 5A2. The deadline for application is usually in December; candidates are advised to contact the Medical Council of Canada for current information: [www.mcc.ca](http://www.mcc.ca).

#### 3.2.2 Provincial Registration

The College of Physicians and Surgeons of Manitoba is the regulation body for the physicians in Manitoba. Each medical student must be registered with the College of Physicians and Surgeons of Manitoba in each year of the academic program. For information on registration in Manitoba contact: The College of Physicians and Surgeons of Manitoba, 1000-1661 Portage Ave., Winnipeg, MB R3G 3T7; telephone: (204) 774 4344 or <http://cpsm.mb.ca>.

## SECTION 4: The Program for the M.D.

### Degree

#### 4.1 Governance,

The program and its curriculum are the responsibility of the Faculty Executive Council (FEC). The policies, regulations, implementation and modifications of the educational program for the M.D. degree are determined by the FEC on the recommendation of the Faculty of Medicine Undergraduate Medical Education Curriculum Executive Committee. The Curriculum Executive Committee is chaired by the Director, UGME Curriculum. The Terms of Reference for this committee and committee membership can be viewed at

<http://umanitoba.ca/faculties/medicine/education/undergraduate/curriculum/Links.html>. The Curriculum Executive Committee is responsible for the curriculum, teaching, and evaluation in the educational program leading to the M.D. degree.

#### 4.2 General Statement,

The program is a continuum over the four years but is divided into the Pre-Clerkship, Years 1 and 2, and the Clerkship, Years 3 and 4, for administrative purposes. The mission and objectives of the program can be found at: [http://umanitoba.ca/faculties/medicine/education/undergraduate/ugme\\_mission\\_objectives.html](http://umanitoba.ca/faculties/medicine/education/undergraduate/ugme_mission_objectives.html). They are given to faculty and students and are the guide for the curriculum. The curriculum is based on the view that it is neither necessary nor desirable for the faculty to present all the knowledge, skills and behaviours that are expected of a student by graduation. Instead the students are provided with the core material which lies in the mainstream of medical science. Students are expected to acquire further knowledge and skills for themselves through study, discussion and scholarly development. They are encouraged to take the initiative to approach instructors and colleagues with regard to learning. The program values the search for knowledge, the evaluation of its worth and its application to the analysis and solution of problems as opposed to the simple memorization of information. Students are expected to develop skills to acquire new knowledge and to realize that these skills will be used throughout their professional lives irrespective of their field of medicine. The curriculum encourages an interdisciplinary and integrated approach to medicine. Teaching sessions promote participation and active learning by students. Instructors, whatever their own discipline, ensure that their teaching is relevant to the overall development of students to become undifferentiated graduates of medicine with the potential to enter any postgraduate position for which they have the ability and aptitude. The Faculty of Medicine does not support students' limitation of their studies to only fields and disciplines of personal interest. Nonetheless, students are encouraged to pursue areas of interest and to develop their own education through electives. Students learn to use information, skills and behaviour from multiple sources of teaching to prevent and solve the problems that face their patients and society. Students learn that physicians are part of an interdisciplinary team and health care system that provide adequate,



accessible, continuous and comprehensive health care. In order to modify and enhance the educational program, the opinions of students and their evaluation of the program and its teachers are formally sought and respected by faculty. This information is used by the Curriculum Executive Committee to improve the program.

#### 4.3 The Plan of the Curriculum,

The curriculum is in the process of renewal. The renewed curriculum will be person/patient centered and will be presented over the four academic years as a fully integrated spiral scaffold curriculum.

##### 4.3.1 Professionalism

Professionalism, behaviour and attitudes befitting medical professionals, an important component of the Undergraduate Medical Education curriculum. The goal is to instill the attributes of professionalism and to emphasize to medical learners that professional characteristics and attributes are necessary for the practice of medicine and for their identity as physicians.

The Faculty of Medicine has developed a professionalism charter that serves as a framework for defining and demonstrating medical professionalism.

The Faculty of Medicine looks forward to learning of students who display exceptional professionalism through letters sent to the Associate Dean, UGME. The Faculty of Medicine uses a Professionalism Report by which single egregious or recurrent lapses in student professionalism can be brought to the school's attention. A summary statement will be included on an individual's Medical Student Performance Record if two or more validated reports have been received. The Faculty of Medicine maintains the option to dismiss students on the basis of unprofessional behaviour, regardless of performance in the curriculum.

##### 4.3.2 Pre-Clerkship Program:

The goals and objectives of the UGME Pre-Clerkship curriculum are based on the mission and objectives of the undergraduate program as outlined: [http://umanitoba.ca/faculties/medicine/education/undergraduate/ugme\\_mission\\_objectives.html](http://umanitoba.ca/faculties/medicine/education/undergraduate/ugme_mission_objectives.html). The evaluation of student academic progress is based on achievement of the learning objectives provided to students on-line through the curriculum management system.

The curriculum is composed of six instructional blocks over two years that address the basic medical sciences, population health, human growth and development as well as systems-based learning (for example, cardiovascular, reproduction, etc.) The two-year Pre-Clerkship curriculum brings together teachers and facilitators from across all Faculty Departments, other healthcare related faculties and disciplines as well as members of the public. All basic medical sciences, including anatomy, molecular biology, bio-chemistry, human genetics, immunology, microbiology, physiology contribute to the curriculum as do the clinically applied basic sciences of pathology, pharmacology and

community health sciences. Clinical departments including anaesthesia, clinical health psychology, family medicine, internal medicine, obstetrics, gynaecology, ophthalmology, otolaryngology, paediatrics, psychiatry, surgery are involved in all aspects of the curriculum. An overview of each Block within the Pre-Clerkship component of the Undergraduate Medical Education program can be viewed at: [http://umanitoba.ca/faculties/medicine/education/undergraduate/program\\_overview.html](http://umanitoba.ca/faculties/medicine/education/undergraduate/program_overview.html).

##### Methods of Teaching

A variety of approaches are used to facilitate learning. These include self-directed learning, small group tutorials, lectures, lab practicals or demonstrations and simulation.

##### Methods of Assessment

Formative and summative assessments are provided throughout the Pre-Clerkship curriculum. These include self-reflection, learning portfolios, tutor feedback, instructional tests, multiple choice examinations, practical examinations, and short and long answer examinations.

##### Attendance

Certain learning sessions in the UGME program are designated as "mandatory attendance" sessions. These are generally sessions in which patients or their families are involved; clinical skills are being taught; or clinical care is being provided. Attendance at these sessions is recorded and reported to the UGME office, and contributes to the evaluation of the learner's professionalism. The Attendance Policy can be viewed at [http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/Pre-Clerkship\\_Student\\_Attendance.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/Pre-Clerkship_Student_Attendance.pdf).

The procedures outlined in this policy do not preclude course directors, session leaders and instructors from tracking student learner attendance in their sessions and discussing any concerns related to attendance with the learners.

##### 4.3.3 Clerkship Program:

The Clerkship component of the undergraduate program is designed to give medical students didactic instruction, supervised responsibility for patient care and frequent feedback and evaluation. The program is governed by the Clerkship Curriculum Committee for which the terms of reference and membership can be viewed on the website: [http://umanitoba.ca/faculties/medicine/education/undergraduate/ugme\\_governance.html](http://umanitoba.ca/faculties/medicine/education/undergraduate/ugme_governance.html).

The Clerkship Program consists of the Introduction to Clerkship, core clerkship rotations, a multiple specialty rotation, and electives. It lasts 20 months. Core clerkships last a minimum of six weeks, multiple specialty clerkships are comprised of shorter individual rotations and electives are offered in units of two weeks or longer.

##### Clerkship Phase I:



*Introduction to Clerkship (ITC) (4.5 weeks):* The Clerkship Program begins with the ITC that is a preparation for clerkship. Each department that provides instruction in ITC has the goal of presenting information and clinical experiences that are relevant to clerkship as a whole.

*Core Clerkship Rotations (48 weeks):* The primary responsibility of the clerks in the program is the care of patients under the supervision of post-graduate students and faculty. Rotation through all major clinical disciplines is provided and these are supplemented by "elective" periods. Six-week periods are spent in family/community medicine, internal medicine, selectives in medicine and surgery, obstetrics/ gynaecology, paediatrics, psychiatry, surgery, and a multiple specialty rotation consisting of anaesthesia, emergency medicine, ophthalmology, otolaryngology and a community health sciences project. Settings for the clerkship experience are varied, including wards and outpatient facilities of the hospitals, doctors' offices, rural and community-based hospitals. Formal teaching and evaluation of the knowledge, skills, attitudes and behaviours pertinent to the discipline are provided during the rotations.

#### Clerkship Phase II:

*Electives and CaRMS National Interview Period (24 weeks):* There are three major elective periods during clerkship. The first period occurs from the end of the core clinical rotations to the December break; the second occurs in January prior to the CaRMS National Interview Period; and the third period follows the CaRMS National Interview Period. Throughout the elective periods, students must pursue education in a minimum of three different disciplines with a minimum duration of two weeks each. Electives may be pursued in a setting of the student's own choice, but must be approved by the Director, Electives.

Students are responsible for all costs associated with electives and CaRMS interviews, e.g. transportation, accommodation etc.

*MCCQE Part I Refresher Series (5.5 weeks):* This is a short program of half day lectures and time for self study in preparation for the licensing examination of the Medical Council of Canada Qualifying Examination Part I (MCCQE Pt 1) and then the actual writing of the MCCQE Part 1 examination. The clerkship program ends with students participating in a mandatory ACLS course.

## SECTION 5: Student Evaluation and Academic Progress

### 5.1 Responsibility,

The policies and procedures for the evaluation of the students in the pro-gram for the M.D. degree are the responsibility of the Faculty Executive Council (FEC).

The responsibilities of the Progress Committee include:

- Recommending to FEC the academic standards by which the progress of students are judged and ensuring that examiners have followed the policies and procedures set by FEC.
- Determining which students may proceed to the next stage of the program or to graduation.
- Determining which students should write supplemental examinations, or be required to take remedial study, or be required to repeat all or part of the academic year before promotion to the next stage of the program or graduation.
- Placing students on Monitored Academic Status or Probationary Academic Status.
- Ensuring that the Committees of Evaluation have followed the policies and regulations of evaluation that have been approved by the FEC.

*The Committees of Evaluation (COE):* The COE, Pre-Clerkship Year 1, COE Pre-Clerkship Year 2 and Clerkship (Years 3 and 4) conduct the evaluation of the students. The knowledge, clinical and communication skills, attitudes and behaviour of the students are evaluated by examination, assessment of performance and completion of assignments.

#### The responsibilities of the COEs include:

- Planning and administration of the evaluation of all aspects of student examinations and performance.
- Planning and administration of all supplemental examinations.
- Planning and administration of all other measures of academic performance.
- Planning and administration of remedial training for students with unsatisfactory academic performance.
- The reporting of the results of examinations, supplemental examinations, other academic performance evaluation and remedial training to the Progress Committee.

### 5.2 Evaluation in the Pre-Clerkship Program,

#### 5.2.1 Summative Examinations

The COEs will inform the students of the pre-determined pass mark for all examinations at the beginning of their block. The student, however, will be given the overall as well as the actual marks obtained in the different sections of the examination. Student results will be reported to them as a pass or fail; neither grades nor honours will be given. Grades and relative performance will be recorded in the student's active file. A student can view his or her active file in accordance with the Student Records Policy an procedures at:

[http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/Student\\_Records.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/Student_Records.pdf).



The Faculty of Medicine uses a Pass/Fail system where grades are not reported external to the Faculty of Medicine. Transcripts and Medical Student Performance Reports will indicate only whether a student has passed or failed a year or block. However, within the Faculty of Medicine, student grades will be used to help identify students at academic risk and to help select students for distinctions such as awards and specialized programs.

There are written comprehensive examinations based on the objectives at the end of each block i.e. three in first year and three in second year. In addition, there is a mid-block examination in Block 1. Each examination may use various methods of evaluation: multiple choice questions, short answer questions, etc. There may also be take-home assignments in each course that contribute to the final mark. The student's performance in the Clinical Skills course will be assessed by OSCE-type examination, typically conducted at the end of Year II. Expectations for student conduct and information related to pass marks for summative examinations can be found in the following UGME policies.

- Examination Conduct Policy

[http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/ExaminationConduct.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/ExaminationConduct.pdf)  
Examination Results Policy

[http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/Examination\\_Results.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/Examination_Results.pdf)  
Deferred Examinations Policy

[http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/DeferredExamination.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/DeferredExamination.pdf)  
Examination Accommodation Procedures

[http://umanitoba.ca/faculties/medicine/media/Accommodations\\_Procedures.pdf](http://umanitoba.ca/faculties/medicine/media/Accommodations_Procedures.pdf)

### 5.2.2 Failures of the Evaluation in Pre-Clerkship Years 1 and 2

The UGME Promotion and Failure Policy governs decisions related to student promotion and failure at the Pre-Clerkship level

[http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/PromotionAndFailure.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/PromotionAndFailure.pdf).

Students failing in up to two examinations can write supplementary examinations in accordance with the Supplemental Examination Policy that can be viewed at [http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/SupplementalExams.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/SupplementalExams.pdf). Students who fail any supplementary examination in first- or second-year will fail that year.

Students who are granted supplemental privileges are expected to under-take remedial study at a time determined by the Director, Remediation during the summer period. Following the remediation, they will sit a supplemental examination comparable but different to that failed. Students who fail the Clinical Skills program will be granted supplemental privileges and receive a remedial period during the summer vacation that will take into account the areas of weakness revealed by their performance and the examination. The performance of students during the remedial period will be evaluated by a preceptor and will normally include an oral and/or written examination and/or repeated OSCE. Students who fail to reach the standard expected after remediation will fail the year.

Students in Year 1 and Year 2 who are successful on the supplemental examination(s) will be promoted.

Year 1 students who fail the year must apply for re-admission to medical school before June 1. Students being considered for re-admission will usually be interviewed by the Admissions Committee to determine how they might better approach medical school so that they might succeed on a second attempt. The Admissions Committee will advise the Associate Dean, Students who will recommend to the Progress Committee whether the student should be re-admitted.

Students who fail Year 2 will automatically repeat it and are not subject to review by the Admissions Committee.

### 5.2.3. Formative Evaluation in Pre-Clerkship

A variety of formative evaluative exercises are conducted in Pre-Clerkship including instructional tests, practice questions, reflective writing, self-evaluation, and peer-evaluations.

### 5.2.4. Remediation in Pre-Clerkship

The student will be required to meet with the Director, Remediation to develop a remedial plan. The exact nature of the remediation may vary with the student and will be designed to meet individual learning needs as defined by the student. The student will also be required to meet with the Associate Dean, Students, who may also direct the student to other faculty members or services for students.

### 5.3 Evaluation of Students in the Clerkship Program,

During the clerkship years students will be evaluated on their competence and this will include assessment of their cognitive knowledge and understanding, clinical skills, problem solving and judgement, technical skills, interpersonal attributes and general professional responsibility. Evaluation will be the responsibility of the Committee of Evaluation, Clerkship (COE Clerkship).

#### 5.3.1 Methods of Summative Evaluation (General)

The policy and procedures applicable for evaluation are:

- Examination Conduct Policy

[http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/ExaminationConduct.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/ExaminationConduct.pdf)

- Examination Results Policy

[http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/Examination\\_Results.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/Examination_Results.pdf)  
Deferred Examinations Policy

[http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/DeferredExamination.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/DeferredExamination.pdf)  
Examination Accommodation Procedures

[http://umanitoba.ca/faculties/medicine/media/Accommodations\\_Procedures.pdf](http://umanitoba.ca/faculties/medicine/media/Accommodations_Procedures.pdf)

Various methods will be used to assess students including the final evaluation re-ports (FITERs); written external NBME examinations and OSCE-type exams. Student performance for evaluation purposes during examinations may be recorded in writing, orally, by computer, by audio or by video taping. All material necessary to generate the mark such as papers, computer records, tapes will be destroyed once the



student has passed that evaluation (such material can be of help to a student needing remediation before the pass). To achieve this quality assurance the Committee of Evaluation Clerkship may use direct observation or indirect observation by audio and video monitoring. Quality assurance material is subject to the aforementioned regulations of the university and the faculty. Furthermore, this material, which could identify the individual student will not be released to anyone, other than the Dean and Committee of Evaluation Clerkship, without the written consent of the student.

### 5.3.2 The Introduction to Clerkship (ITC)

The goal of Introduction to Clerkship (ITC) is to prepare the student for clerkship rotations. Students will be assessed for attendance and performance in learning groups. The purpose of student evaluations in ITC is to ensure that students are ready to begin the clerkship rotations.

Readiness for clerkship must be demonstrated in many areas including: basic medical knowledge and its application; clinical skills in evaluating patients; analysis of clinical data; problem identification and diagnosis; planning of investigation; planning of management and therapy; relationships to patients and staff. These attributes will be evaluated in a variety of ways throughout ITC.

#### Method of Evaluation

Students failing to attend mandatory sessions will be reported to the Associate Dean UGME, who will inform the COE Clerkship. Each student will receive a warning from the Associate Dean's office. If this warning is ignored the student's attendance record and performance will be considered by the COE Clerkship and the student may be failed for the sessions missed. A suitable remedial period may be provided. If the student does not perform satisfactorily in the remedial period the ITC will be failed.

The student must be informed of a recommendation for failure within seven working days of the end of the session. The pass/fail decision will be given by the departmental representative to the COE Clerkship. In the case of a failing evaluation the reasons for failure must be documented and submitted to the COE Clerkship.

### 5.3.3 ITC Remediation

#### Failure for inadequate attendance

The coordinator of the block of sessions missed may, with approval of the Director, Clerkship Curriculum, provide the student with a remedial course, of comparable educational experience in that subject and the student will have to attend and perform satisfactorily to pass the ITC.

### 5.3.4 The Major Clinical Clerkships

#### Method of Evaluation

The evaluation of the students during the clinical clerkship rotations may be assessed by review of clinical performance, written examinations, and projects as in community health sciences.

#### Clinical Performance

The objectives of the Clerkship Program are consistent with the Undergraduate Medical Education Objectives found at: [http://umanitoba.ca/faculties/medicine/education/undergraduate/ugme\\_mission\\_objectives.html](http://umanitoba.ca/faculties/medicine/education/undergraduate/ugme_mission_objectives.html).

The Midpoint In-Training Report (MITER) is a formative evaluative exercise in rotations of four weeks or longer. The student uses this report to complete a self-evaluation which is then discussed with the student's preceptor. If a student's performance is likely to lead to a failure, the Clerkship Director must advise the student of an impending failure by the midway point of the rotation. In such cases, the student must be given help to improve performance to the expected standard. The Clerkship Director, or designate, will collect preceptor assessments throughout the rotation. The Clerkship Director, or designate, will use all evaluations to make a final decision on the student's performance at the end of the rotation in that department. A Final In-Training Evaluation Report (FITER) of each student's achievement of these objectives will be completed for each rotation.

A failing student must be informed of the failure by the Clerkship Director, or designate, preferably before the end of the rotation but not later than seven working days after the rotation is complete. All results will be submitted to the undergraduate committee of the department, who, for a failure, will review all the evaluations and preceptors' pass/fail assessments and determine the overall pass/fail standing for the student during the rotation in question.

The pass/fail recommendation, with the FITER and any supporting evidence for that decision, will be submitted by the departmental representative to the COE Clerkship. The pass/fail decision will be reviewed and affirmed if there is a majority vote of the members of COE Clerkship present at the first meeting of the COE Clerkship following the completed rotation. In the case of a tie, the chair of COE Clerkship will have the deciding vote, otherwise he or she will not vote.

On occasions, Progress Committee may deem it necessary to forward feed student summative evaluation information to subsequent Clerkship Directors, or designates. In such instances, the student will be informed and the process will follow that outlined in the Forward Feeding Policy and Procedures found at:

[http://umanitoba.ca/faculties/medicine/education/opas/media/Forward\\_Feeding\\_Policy\\_and\\_Procedures.pdf](http://umanitoba.ca/faculties/medicine/education/opas/media/Forward_Feeding_Policy_and_Procedures.pdf).

#### Clerkship Written Examinations

Students will take the National Board of Medical Examiners (NBME) subject examinations at the end of the following clerkship periods: obstetrics/ gynaecology, paediatrics, psychiatry, and surgery. For internal medicine the NBME examination will take place after the internal medicine



selective rotation. For core surgery the NBME examination will take place following the major surgery rotation. The passing standard for National Board Exams will be the 11th percentile of the entire reference group. Students failing a NBME examination will re-sit this examination as outlined in the Supplemental Examination Policy: [http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/SupplementalExams.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/SupplementalExams.pdf).

### 5.3.5 The Comprehensive Clinical Examination (CCE)

The goal of the Comprehensive Clinical Examination (CCE) is to objectively evaluate student clinical competence in generic skills of data collection, interpersonal relationships, along with the content of the case for diagnosis, investigation, and management of common clinical problems. This examination frequently uses standardized patients to test these clinical skills. The CCE committee is a sub-committee of the COE Clerkship and is chaired by the CCE coordinator. The CCE is marked to a standard predetermined by the CCE committee and the results of the examination are submitted to the COE Clerkship.

### 5.3.6 The Multiple Specialty Rotation in Clerkship (MSR)

#### Method of Evaluation

The evaluation of students during each component of the MSR clerkship rotation includes assessments of attendance, performance and could include faculty prepared examinations. Students will be expected to attend all clinical, small group, and laboratory sessions. Clinical performance will be judged, where applicable, as in the major clerkships. The Clerkship Director, or designate, must advise each student by the mid-way point of each component of the rotation if his or her performance is likely to lead to a failing assessment in that component. Failing students must be given due opportunity to improve their performance to the expected standard. The Clerkship Director, or designate, will use all evaluations to make a final decision on the student's performance at the end of each component of that rotation. A failing student must be informed of the failure by the preceptor, Clerkship Director, or designate preferably before the end of the rotation but not later than seven working days after the rotation is complete. All results will be submitted to the undergraduate committee of the department, who, in the case of a failure will review all the evaluations and preceptor(s) pass/fail assessments to determine the overall, pass/ fail standing for the student in that department.

### 5.3.7 The Elective Periods

#### Method of Evaluation

Electives are evaluated in a similar manner to other clerkship rotations and students are required to obtain a completed elective evaluation form for every elective pursued. These evaluations will be reviewed by the Director, Electives, and unsatisfactory assessments will be submitted to the COE Clerkship.

### 5.3.8 Remediation during Clerkship

Generally in the Clerkship program remediation is scheduled during electives or other suitable time as determined by the Faculty. The Director, Remediation in consultation with the Clerkship Director, or designate will design this remediation which may include further clinical experience.

#### Clerkship Clinical Performance Remediation

The COE Clerkship will provide the student who has failed a clinical rotation an appropriate remedial period with the department in which the rotation was failed. The rotation will be an equivalent educational experience to the clerkship failed, and its goal will be to assist the student to reach the expected standard of clinical competence. A similar process of evaluation will be used, and this may be supplemented by a clinical oral examination if the departmental undergraduate committee deems it necessary. The remedial rotation will be taken during an elective period.

#### Remediation for NBME Examination Failures

Students failing any two NBME examinations (in the same subject or different subjects) will receive a remedial period of training from the department of that subject. The Director, Remediation in conjunction with the Clerkship Director, or designate, will design the remediation; further clinical experience may be needed to meet that purpose. Such a remedial period will be a maximum of four weeks and will be taken in an elective period and followed by a third attempt at the National Board examination.

#### Remediation for Failure in the CCE

The COE Clerkship will devise an appropriate remedial period which will take into account the areas of weakness demonstrated by the CCE and will be taken during elective time. This remediation will be evaluated by a clinical assessment and may include an oral and/or written exam.

#### Remediation for an MSR Clerkship Failure

The COE Clerkship will provide the student who has failed a clinical component of the MSR with a remedial period in the department in which the rotation was failed. This period is flexible but can be up to the same length as the failed rotation. Such a remedial rotation will be an equivalent educational experience to that failed and its goal will be for the student to reach the expected standard of clinical performance. A similar process of evaluation will be used and may be supplemented by a clinical oral and/ or written examination if the department deems it necessary. The remedial will be taken in an elective period.

#### Remediation for an Electives Failure

The COE Clerkship will devise a remedial period of up to four weeks which will take into account the areas of weakness revealed by the student's elective evaluation. This will be taken in the next available free time for the student. The remedial period will be evaluated by clinical assessment and can include an oral examination if the COE Clerkship deems it necessary.



### 5.3.9 Failure of a Student in the Clerkship Program

The Clerkship Program is a continuum held over Year 3 and Year 4. A failure of the Clerkship Program is considered to be a failure of one year, see Section 3 Academic Regulations, above.

#### Failure of the Clerkship

The student will be determined to have failed the Clerkship Program if:

#### 1. Failure of Clinical Assessments

The student has received failing evaluations in one or more of the following:

a) Two major clerkships in different disciplines (Internal Medicine, Internal Medicine Selective, Surgery, Surgery Selective, Paediatrics, Obstetrics/ Gynaecology, Psychiatry, and Family Medicine)

OR

b) One major clerkship and:

- i) its remedial, or
- ii) an ITC remedial, or
- iii) an MSR remedial, or
- iv) an elective remedial

OR

c) Remedials in two of the following:

- i) Anesthesia
- ii) Emergency Medicine
- iii) Otolaryngology
- iv) Ophthalmology
- v) Community Health Sciences
- vi) Elective
- vii) ITC

#### 2. Failure of Examinations

The student has failures in one or more of the following:

a) A single NBME subject examination three times

OR

b) A total of five NBME examinations

OR

c) The CCE after remediation

#### 3. Remediation Related Failures

If the remediation period recommended for a student, for whatever cause, requires more than eight weeks, then the student will be deemed to have failed the Clerkship Program. Complete information related to promotion and failure in any year of the Undergraduate Medical Education program can be found in the Undergraduate Medical Education Promotion and Failure Policy and Procedures at [http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/PromotionAndFailure.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/PromotionAndFailure.pdf).

### 5.3.10 Terms for the Repeat Clerkship

A student who fails the Clerkship Program, be it because of failure of clinical assessments, failure of examinations, or failure of remediation (as above), immediately ceases in the program, and will be required to repeat the Clerkship Program. The Repeat Clerkship will consist of the following, at a minimum: Six-week rotations in each of Core Internal Medicine, Core Surgery, Paediatrics, Family Medicine, Psychiatry, and Obstetrics/Gynaecology, plus 12 to 16 weeks of electives. A student in the Repeat Clerkship will also be required to complete the ACLS course (0.5 weeks), the LMCC refresher course (4.5 weeks). The student will be granted 3 weeks for CaRMs interviews and two weeks for vacation. Furthermore, if the failure occurred prior to the completion of the Medicine Selective, Surgery Selective, Multiple Specialty Rotation (MSR), or Community Health Sciences Project, then these will be required components of

the Repeat Clerkship as well. The student must satisfactorily meet all clinical assessments, examinations, the CCE, as well as remedial rotations (as appropriate), regardless of whether they had been passed previously. The terms of the Repeat Clerkship will be submitted to the Progress Committee for review and final approval.

### 5.3.11 Terms for Failure of the Repeat Clerkship

The terms for failure of the Repeat Clerkship are the same as listed above in 5.3.7 "Failure of a Student in the Clerkship Program." A student who has failed the Repeat Clerkship will be required to withdraw from the Faculty of Medicine program.

### 5.4 Regulations for Students Taking Leave from the Clerkship Program

Students may, for health or personal reasons, withdraw from clinical rotations or take temporary leave. For planned leave, prior permission must be obtained from the Associate Dean, UGME and/or Associate Dean, Students or designate. For leaves due to sudden or unexpected circumstances, the Associate Dean, UGME, the Director, Clerkship Curriculum, and the Clerkship Director or designate of the rotation must be informed. Written documentation of the reason for leave will be required by the Associate Dean, UGME. The information is confidential to the Associate Dean, UGME and Associate Dean, Students or designate.

Students who require an extended leave from the Clerkship Program may have a delayed graduation.

If a student misses more than 25% of a rotation, the student will not receive credit for the rotation regardless of the reason. The student will be required to repeat the entire rotation.

Brief periods of leave may be taken upon notification and approval by the Director, Clerkship Curriculum. For complete details on attendance during clerkship please refer to the full Clerkship Attendance Policy and procedures at: <http://umanitoba.ca/faculties/medicine/education/undergraduate/policies.html>.

Generally, the Clerkship program is completed in 79 weeks, excluding CaRMS interview time and holiday time. When, due to leaves of absence, a student will take more than 79 weeks, including elective periods, to complete the Clerkship Program the Committee of Evaluation Clerkship will review the student's record (clinical assessments and examinations) during the Clerkship Program to ensure that the time lost has not compromised the overall achievement of the student.

### 5.5 Reappraisal and Appeal of Failed Rotations and Examinations

A student who has failed or received "Unsatisfactory" on a Block examination or an OSCE-Type examination can request a reappraisal of the evaluation in accordance with the Reappraisal of Student Evaluations Policy [http://umanitoba.ca/faculties/medicine/media/Reappraisal\\_of](http://umanitoba.ca/faculties/medicine/media/Reappraisal_of)



[\\_Student Evaluations Policy FEC February 2011.pdf](#)  
Policy.

If the student is not accepting of the decision reached by a Reappraisal Committee as outlined in the above stated policy, the student can appeal the decision to the Undergraduate Student Appeals Committee:  
[http://umanitoba.ca/faculties/medicine/education/ed\\_dev/media/UGME\\_Student\\_Appeals.pdf](http://umanitoba.ca/faculties/medicine/education/ed_dev/media/UGME_Student_Appeals.pdf).

A student can appeal a decision of the Undergraduate Student Appeals Committee to the Faculty of Medicine Student Appeals Committee and a student appeal of the Faculty of Medicine Student Appeals Committee can be brought to the Senate Committee on Student Appeals.

The Faculty of Medicine will not accept requests for reappraisal of external examinations. The National Board of Medical Examiners (NBME) provides a *Score Recheck Service*, details of which are posted on the NBME website at: <http://www.nbme.org/Schools/Subject-Exams/score.html>. Students are responsible for the cost of a Score Recheck that may be requested on their behalf by the Faculty of Medicine.

## SECTION 6: Academic Research in Medical Education

Part of the educational responsibility of the Faculty of Medicine is to perform research on innovations and effectiveness in medical education. Whenever students are the research subjects, all such research must have approval from the Faculty of Medicine Research Ethics Board. Where students are studied individually their participation will be voluntary. Research findings will not identify individuals.

## SECTION 7: Additional Degrees in Medicine

### 7.1 Bachelor of Science in Medicine (B.Sc. (Med.)), 7.1.1 General Information

The Bachelor of Science in Medicine program is offered over two summer terms; following the first and second year of the undergraduate program in Medicine. The B.Sc. (Med) program is designed to provide the undergraduate medical student with an opportunity to gain firsthand experience in medical research. A large variety of basic science, translational and clinical research projects are available for the student to choose from each year.

The program consists of four components:

- Research project
- Clinical exposure
- Written report
- Dissertation

The program is open to undergraduate students in the Faculty of Medicine and, if approved by the B.Sc. (Med) Committee, to selected undergraduate students from other Canadian and international medical schools. The work for this degree may be carried out in any department of the Faculty of Medicine at the University of Manitoba as well as approved external facilities. This program may not be taken concurrently with any part of the medical curriculum nor by a student who is not in good standing. To enrol in the B.Sc.(Med) program the student must find a supervisor in any field within the Faculty of Medicine. The supervisor must be a member of the Faculty of Medicine. Together, the student and supervisor submit an application which includes a project proposal to the B.Sc.(Med) Committee. If the project proposal is accepted by the committee, students are accepted into the B.Sc. (Med) Program and can then be registered with the university for the B.Sc.(Med) summer sessions.

An examining committee comprised of faculty members excluding the B. Sc.(Med) program director, one from outside the department in which the research work is carried out, will be established for each student by their respective supervisor.

Students will be required to produce research and present their findings acceptably in both a written report and oral presentation at the conclusion of their second summer. Students will be evaluated by their Supervisor after the first summer and by their examining committee following the completion of the requirements for the B.Sc.(Med) degree. Students will be required to withdraw from the program if they make unsatisfactory progress, including after the first summer of research.

The B.Sc.(Med) degree will be conferred at the same time as the M.D. degree unless the student, having satisfactorily completed the requirements for the B.Sc.(Med) degree, discontinues the study of Medicine at the University of Manitoba or other approved institution. In this case, the B.Sc.(Med) degree will not be conferred.

The program is on a Pass/Fail basis. Incompletion of the program outside of the normal voluntary withdrawal time frame will be considered a fail.

### 7.1.2 Program Fees

The program fees will be additional to the Faculty of Medicine tuition fees. Program fees change annually.

### 7.1.3 Stipendiary Support

Students receive stipendiary support during each 13 week term. Presently support is in the amount of \$5000.00 per 13 week term.

## 7.2 MD/PhD Program, 7.2 MD/PhD Program

### 7.2.1 Purpose



The combined-degree MD/PhD Program in the Faculty of Medicine is designed to produce academic clinician scientists who are interested in a career that combines both research and clinical medicine, providing them advanced clinical, academic and research skills.

### 7.2.2 Duration

The minimum program of study is the total required by the Faculty of Medicine for the MD program (4 years) plus the minimum requirements of the Faculty of Graduate Studies (3 years from honours undergraduate degree). Students who obtained advanced/graduate training prior to admission may be granted advanced standing. Students will be considered to be full-time graduate students (see Faculty of Graduate Studies guidelines pertaining to Full-Time Status) throughout the entire period. Typically, following completion of Med II, students undertake a 3-4 year sabbatical from MD training to undertake and complete doctoral research training. They then return to third year Medicine to begin Clerkship.

### 7.2.3 Eligibility

Medical Students are eligible to apply upon initial admission to Medicine and at any time during the first two years of the MD program. Semi-annual competition deadlines are posted at the program website :

<http://www.umanitoba.ca/faculties/medicine/education/undergraduate/6696.html>.

### 7.2.4 Application Process

Potential applicants should carefully review full details on the application process posted on the program website. Students wishing to apply should contact the Director of the Program early in the process (hayglass@cc.umanitoba.ca). Acceptance will minimally require: 1) identification of a supervisor (within a department at the University of Manitoba which has an approved PhD program) who has adequate resources for the research expenses necessary for proposed program of study and whose department recommends acceptance, 2) interview with the Faculty MD/PhD Selection Committee and their recommendation for acceptance, and 3) acceptance by the Faculty of Graduate Studies.

### 7.2.5 Program Fees

The total tuition fees payable are the sum of the fees required for the MD and PhD programs of study. Continuing fees (Faculty of Graduate Studies) are also applicable. Under current tax regulations, such fees are largely refunded as tax credits to graduates who continue to reside in the province of Manitoba. In most instances, a tax free stipend (current minimum \$21,000 pa) is provided for six years to trainees who enter the program and remain in good standing. The six years of support is NOT shortened for trainees who achieve their research-based PhD in less than six years before returning to medical training.

### 7.2.6 Administration

Undergraduate Calendar

After initial assessment of the complete application dossier by the MD/PhD Program Director, the program advisory and admission committee (PAAC), chaired by the MD/PhD Program Director, reviews all eligible applications and makes a recommendation to the Faculty of Graduate Studies. The Associate Deans for Research, UGME, and Students, Faculty of Medicine and the Associate Dean, Faculty of Graduate Studies, are advisory to the Program Director, Advanced Degrees in Medicine. They will ensure: 1) adequate resources for all aspects of the delivery of the program, 2) liaison with the Trainee's host Department, the Faculty of Medicine (including flexibility re: leaves for research) and Faculty of Graduate Studies, 3) review of advisory committee composition/function and of student progress and 4) the provision of program elements considered important to the success of the Option.

### 7.2.7 Coursework

The minimum course requirements of the Faculty of Graduate Studies, as defined by individual departmental supplementary regulations, are applicable in addition to the normal curriculum of undergraduate medical studies.

### 7.2.8 Research/Thesis Requirements

The quality and quantity of research supporting the thesis shall be consistent with that required for all other doctoral candidates in the field.

### 7.2.9 Additional Program Elements: Seminar Series and Research Progress Evaluations

Each student will be required to regularly attend a designated research seminar series organized by the sponsoring research discipline of the student. In addition, mandatory attendance will be required of all MD/PhD students and their supervisory faculty advisors to participate in a semi-annual program-wide, MD/PhD Student Research in Progress Forum. These regular research days will provide time for students to present their work to a critical audience (research proposals, work-in-progress, critical reviews in major areas of recent scientific advances, etc.), and promote networking within the program. Each student will be required to present a research update once a year, and satisfactory performance at this yearly assessment a requirement for continuation of program support.

### 7.2.10 Conferment of the Dual Degrees of MD/PhD

The MD and PhD degrees will usually be conferred simultaneously during convocation upon satisfactory completion of the MD and PhD programs.



on how to register online, please refer to the chapter, "Registration Information: Aurora Student". Registration must be complete prior to the first day of classes.

## SECTION 8: Registration Information

### 8.1 Initial Registration Access Times,

Students in the Faculty of Medicine Undergraduate Medical Education Pro-gram will be given access time to the registration system (Aurora Student) in July. For instructions

Each student is registering in the same course for both the **Fall AND Winter** sessions. Med III students will be able to register in their **Summer** session in mid-March. Students are asked to contact Admissions and Enrolment Services at (204) 789-3569 if registering difficulties are encountered.

Courses for the Undergraduate Medical Education program are:

Program & Year	Faculty/ School Codes	Terms	Dept. Number & Course Number	Lecture Section	Lab Section
Medicine I	05	Fall 2012 and Winter 2013	UGME 1000	L01	Not Applicable
Medicine II	05	Fall 2012 and Winter 2013	UGME 2000	L01	Not Applicable
Medicine III	05	Fall 2012 Winter and Summer 2013	UGME 3000	L01	Not Applicable
Medicine IV	05	Fall 2012 and Winter 2013	UGME 4000 UGME 4990	L01	Not Applicable

### 8.2 Web Registration Exceptions,

Students who have a failing grade/s registered against them and/or have other outstanding academic matters (i.e. deferred or supplemental examinations, modified program, etc.) in regards to the previous academic session will not be allowed to register using the web registration system. Students who fall into this category should contact the Admissions and Enrolment Services at (204) 789-3569 for further information.

### Bachelor Science in Medicine and Summer Early Exposure Programs

Students approved to participate in summer enrichment programs will be registered by the Faculty.

### 8.3 Prior to Registration,

New Students: All incoming students must complete an application to the College of Physicians and Surgeons of Manitoba, complete a Heart and Stroke certified course in BLS for Healthcare Providers (HCP-C) and submit the following documentation prior to the first day of class: immunization records, Adult Criminal Records Check (with vulnerable sector search), Child Abuse Registry Self-Check, Essential Skills and Abilities (Technical Standards) for Admission, Promotion and Graduation in the MD Program, and Accommodation for Undergraduate Medical Students with Disabilities. If you are unable to submit these documents by the first day of class please contact Admissions and Enrolment Services.

Returning Students: All returning students must re-certify their CPR in a Heart and Stroke certified course in BLS for Healthcare Providers (HCP-C) and submit a copy of their card to the Faculty of Medicine office prior to the first day of

class. Returning students must be registered with the College of Physicians and Surgeons of Manitoba by June 30 of each year and must provide current documentation on Adult Criminal Record Check (with vulnerable sector search) and Child Abuse Registry Self-Check prior to the first day of class.

## SECTION 9: Biochemistry & Medical Genetics -3000 Level

**BGEN 3020** Introduction to Human Genetics Cr.Hrs.6 (Formerly 137.302) Principles necessary to understand and study genetically influenced malformations, diseases and variation in individuals and in populations. Two terms. Lectures, tutorials and assignments. Not to be held with the former 080.301 or 125.301.

## SECTION 9: Biochemistry & Medical Genetics -4000 Level

**BGEN 4010** Project Course in Human Genetics Cr.Hrs.6 (Formerly 137.401) A research project chosen in consultation with and supervised by a faculty member. A written report is required. The course is available primarily to final year Honours students in the Honours Genetics program. Selection of project and supervision to be arranged prior to September 30 and submitted in writing to department head. Deadline for submission of first draft to supervisor by March 1. Deadline for submission of final draft to supervisor and course coordinator is March 31.

**SECTION 9: Human Anatomy & Cell Science****-1000 Level****ANAT 1030** Human Anatomy Cr.Hrs.3

(Formerly 080.103) To present the essentials of the organization and structure of the human body. Surface, functional and applied anatomy will be taken into consideration. For Pharmacy students only.

**SECTION 9: Pharmacology -4000 Level****PHAC 4020** Pharmacology Basics Cr.Hrs.6

General mechanism of action of the important groups of drugs and factors which control and modify their effects. Overview of the use and side effects of drugs. Not to be held with the former 089.210.

**PHAC 4030** Drugs in Human Disease I Cr.Hrs.3

Foundation physiological principles underlying human disease intergrated with drug disposition and effects of important drug groups on disorders of the autonomic and central nervous systems, and the cardiovascular system. May not be held with PHAC 4020. Prerequisites: BIOL 2410 (or ZOO 2530 or 022.253) and BIOL 2420 (or ZOO 2540 or 022.245).

**PHAC 4040** Drugs in Human Disease II Cr.Hrs.3

Foundation physiological principles underlying human disease integrated with effects of important drug groups on endocrine and organ system disorders, allergy and inflammation, infection, and cancer. The course also offers an introduction to basic clinical pharmacology as well as several current specialized topics in pharmacology. May not be held with PHAC 4020. Prerequisites: BIOL 2410 (former ZOO 2530 or 022.253) and BIOL 2420 (former ZOO 2540 or 022.254).

**SECTION 9: Physiology -1000 Level****PHGY 1030** Fundamentals of Medical Physiology Cr.Hrs.6

(Formerly 090.103) The function and regulation of the systems and major organs of the human body as they relate to clinical disorders. For Pharmacy students only.

**SECTION 9: Pharmacology -2000 Level****PHAC 2100** Pharmacology Cr.Hrs.6

(Formerly 089.210) General principles of pharmacology including consideration of the pharmacodynamics of important drugs and control and modification of drug action.



## Marcel A. Desautels Faculty of Music

**Dean:** Edmund Dawe

**Associate Dean(s):** Joan Linklater

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**Academic Staff:** Please refer to the Faculty of Music website at [umanitoba.ca/music/](http://umanitoba.ca/music/)

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### SECTION 1: Degree and Diploma Programs Offered

Degree	Years to Complete	Total Credit Hours
Bachelor of Music	4 *	126
Bachelor of Music (Composition)	4 *	126
Bachelor of Music (History)	4 *	126



Bachelor of Music (Performance)	4 *	126
Bachelor of Music/ Bachelor of Education	5 **	174 – 177
Bachelor of Jazz Studies	4 *	126
Post-Baccalaureate Diploma in Performance	1	30

\* Minimum time to graduation: Four years if admission is directly from high school and five years if admission is via University 1.

\*\* An integrated degree that combines Music with Education; minimum time to graduation: five years in Music and Education if admission is directly from high school and six years if admission is via University 1.

## SECTION 2: Admission to Music

### 2.1 Course Requirements for Admission from High School,

Admission to the Faculty is directly from high school, although admission from University 1 is an option.

#### Other requirements

High school prerequisites: Music 40S is strongly recommended, while a second 40S language is recommended. Private lessons in your instrument and formal instruction in music theory and keyboard study are strongly recommended. Good academic performance in subject areas other than music is also strongly recommended. Refer to:

[umanitoba.ca/faculties/music/prospective/Undergraduate.html](http://umanitoba.ca/faculties/music/prospective/Undergraduate.html) <http://umanitoba.ca/faculties/music/future/210.htm> for audition information or [admissions@umanitoba.ca](mailto:admissions@umanitoba.ca)

## SECTION 3: Academic Regulations

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. In addition, the Faculty has regulations and requirements, published below, which apply specifically to its students. Detailed information regarding regulations is available in the general office of the Faculty. The aim of the Bachelor of Music and Bachelor of Jazz Studies programs is to provide a basic framework of knowledge and ability; both theoretical and practical, from which either professional activities or graduate specialization can start. The Bachelor of Music four-year program contains concentrations in specified areas in the third and fourth years. After their first two years, students select the area in which their interests and abilities are strongest. The faculty offers four-year programs leading to the degree of either Bachelor of Music, with the following concentrations: Performance, Composition, History, and General Music and the five-year Integrated Bachelor of Music/Bachelor of Education. The four-year Bachelor of Jazz Studies is a direct entry program from high school. Practical study may be in piano, organ, harp, harpsichord, classical guitar, lute, recorder, voice, or any standard orchestral instrument: strings, woodwinds, brass, and percussion, and all the traditional jazz instruments. Ensemble work is included in all years of the program. Music courses are available to students in other faculties and schools. Consult section 6.0 or the appropriate section of this Calendar for regulations.

### 3.1 Written English Requirement and Mathematics Requirement,

Students in the Bachelor of Music and the Bachelor of Jazz Studies programs meet the university's written English requirement through three credit hours of English; ENGL 1310 or an equivalent. The university's mathematics requirement is met through the required course, MUSC 3230 Acoustics of Music (3 credit hours). These courses are listed as requirements to complete the first year of all Bachelor of Music programs and Bachelor of Jazz Studies.

### 3.2 Electives (Non-Music),

Students are required to take one course in a subject other than music for each year of the Bachelor of Music and Bachelor of Jazz Studies program to a total of 21 credit hours (18 for the Integrated B.Mus./B.Ed.). With the exception of the university's written English requirement in the first year, the student is free to choose any subject but is advised to seek the advice of faculty.

### 3.3 Ensembles,

The Faculty offers a wide variety of opportunities for participation in ensembles such as the Women's Choir, Concert Choir, University Concert Band, University Singers, University Symphony Orchestra, University Wind Ensemble, University Jazz Orchestra, Jazz Ensembles, Collegium Musicum, Opera Theatre, Chamber Ensemble, Percussion Ensemble, Musical Theatre, XIE (eXperimental Improv Ensemble), Brass Choir, Classical Guitar Ensemble and other wind, string and keyboard combinations. Bachelor of Music students are required to participate in two ensembles each year for four years. Bachelor of Jazz Studies students are required to participate in one ensemble each year for four years. The Ensemble Committee determines placement in credit ensembles; such participation will normally be in ensembles directly relevant to the student's major practical study area. Students from other faculties and non-university musicians are welcome to participate as space and instrumental balance allow, but all participation is at the discretion of the conductor or coach of the ensemble. Some ensembles are offered for credit in other faculties.

### 3.4 Scholarships,

Entrance and continuing scholarships are available for Faculty students. Details may be obtained from Financial Aid and Awards or the Marcel A. Desautels Faculty of Music.



### 3.5 Scholastic Progress,

Within the first week of the term, students will be informed of the organization of materials, the nature and timing of testing, and the proportionate weighting of marks that contribute to the final grade in all academic courses at the Marcel A. Desautels Faculty of Music. Regulations regarding the grading of all practical courses at the Faculty are contained in the Student Handbook; special attention is called to the Recital and Master Class Attendance Policy which is an integral part of the grading system for Major Practical Study in each year of the program. A grade of "C" or better is required in each Music course throughout the Bachelor of Music and Bachelor of Jazz Studies programs, except where the Faculty Student Handbook states otherwise. Students who take Music elective courses and fail to achieve a minimum grade of "C" in them should repeat these courses. Due to the system of rotating electives, this may not be possible and in such a case another approved Music elective may be substituted. Supplemental examinations are not normally given in the Faculty, with the following exception: where a jury mark of "D" has been assigned in Major Practical Study, the juried examination may be reheard prior to the next registration. A sessional (September to April) Grade Point Average of less than 2.0 (C), or failure to achieve a grade of "C" or better in two Music courses will result in a student being placed on probation. While on probation, the student remains in the program but is subject to a set of conditions that are established by the Faculty of Music. A student failing to meet these conditions may be placed on suspension. Each student is permitted a maximum 21 credit hours of failed Music courses in the Bachelor of Music and Bachelor of Jazz Studies programs. Students will not be permitted to register for a required music course more than twice without the permission of the Dean.

### 3.6 Dean's Honour List,

B.Mus. and B.Jazz students who achieve a sessional (September to April) Grade Point Average of 3.5 and are registered in a minimum of 80% of a full-time program in both fall and winter terms will be eligible for the Dean's Honour List. Students who are granted incomplete or deferred status will not be eligible.

### 3.7 Attendance,

Regular attendance is expected of all students in all courses. Any unexcused absences from ensemble or practical study courses or three unexcused absences from any other music course may result in the student being required to withdraw from the course or ensemble, or may result in a failing grade being assigned. Students absent from a class for three or more consecutive meetings due to illness may be required to present a certificate from a physician. Prior approval for extended absences from class for reasons other than illness must be obtained from the instructor and the director. Unexcused absence from a class test may result in a grade of zero for the test. Make-up tests may be allowed in special circumstances.

## SECTION 4: Program Requirements

### 4.0: Program Requirements Introduction

#### SECTION 4: Program Requirements Intro,

These programs are in effect for students admitted since 1997-98. Students who entered in previous years should consult earlier calendars.

### 4.1 First Year

Bachelor of Music		
MUSC 1070	Introduction to the History of Music	3
MUSC 1080	History of Music 2	3
MUSC 1110	Music Theory 1	3
MUSC 1120	Music Theory 2	3
MUSC 1180	Ensemble	2
MUSC 1190	Ensemble	2
MUSC 1380	Basic Musical Skills 1	2
MUSC 1390	Basic Musical Skills 2	2
MUSC 1400	Major Practical Study	6
MUSC 3230	Acoustics of Music	3
ENGL 1310	English	3
Total Credit Hours 32		
Bachelor of Jazz Studies		
MUSC 1110	Music Theory 1	3
MUSC 1120	Music Theory 2	3
MUSC 1182	Jazz Ensemble 1	2



MUSC 1192	Jazz Rhythm and Performance Techniques	2
MUSC 1280	Musical Style and Structure 1	3
MUSC 1290	Musical Style and Structure 2	3
MUSC 1380	Basic Musical Skills 1	2
MUSC 1390	Basic Musical Skills 2	2
MUSC 1400	Major Practical Study	6
MUSC 3230	Acoustics of Music	3
ENGL 1310	English	3
Total Credit Hours 32		

#### 4.2 Second Year

<b>Bachelor of Music</b>		
MUSC 2070	History of Music 3	3
MUSC 2080	History of Music 4	3
MUSC 2110	Music Theory 3	3
MUSC 2120	Music Theory 4	3
MUSC 2180	Ensemble	2
MUSC 2190	Ensemble	2
MUSC 2380	Basic Musical Skills 3	2
MUSC 2390	Basic Musical Skills 4	2
MUSC 2400	Major Practical Study	6
	Non-Music elective	6
Total Credit Hours 32		
<b>Bachelor of Jazz Studies</b>		
MUSC 2072	Jazz History 1	3
MUSC 2082	Jazz History 2	3
MUSC 2112	Jazz Theory 1	3
MUSC 2122	Jazz Theory 2	3
MUSC 2182	Jazz Ensemble 2	2
MUSC 2192	Jazz Improvisation 1	2
MUSC 2380	Basic Musical Skills 3	2
MUSC 2390	Basic Musical Skills 4	2
MUSC 2400	Major Practical Study	6
	Non-Music elective	6
Total Credit Hours 32		

#### Integrated Bachelor of Music (Music Education)/ Bachelor of Education Program

MUSC 2070	History of Music 3	3
MUSC 2080	History of Music 4	3
MUSC 2110	Music Theory 3	3
MUSC 2120	Music Theory 4	3
MUSC 2180	Ensemble	2
MUSC 2190	Ensemble	2



MUSC 2380	Basic Musical Skills 3	2
MUSC 2390	Basic Musical Skills 4	2
MUSC 2400	Major Practical Study	6
MUSC 2460	Conducting	3
Teachable Minor* see(**)		6
Total Credit Hours 35		

**NOTE:** Apply to Integrated Program during Year 2. Deadline to apply is February 1.

\*For listing of teachable minors, see Senior Years teachable major/minor chart in the Education section of the calendar.\*\*Only those students admitted into their 3rd year in the Faculty of Education for September 2008 and earlier are permitted a 2nd music specialization. Prior to beginning Year 5 students must have completed the Aboriginal Education Requirement and the Special Education/Diversity Requirement which is defined as 3 credit hours Aboriginal Education and 3 credit hours Special Education/Diversity.

#### 4.3 Third Year

<b>Bachelor of Music - Performance</b>		
MUSC 3180	Ensemble	2
MUSC 3190	Ensemble	2
MUSC 3470	Major Practical Study	6
MUSC 3550	Recital 1	3
MUSC 3960	Music of the 20th Century 1	3
MUSC 3970	Music of the 20th Century 2	3
	Music electives	6
	Non-Music elective	6
Total Credit Hours 31		

**NOTE:** A grade of "B" is required in 3550 to continue in the Performance Concentration.

<b>Bachelor of Music - History</b>		
MUSC 3050	Research Methods	3
MUSC 3180	Ensemble	2
MUSC 3190	Ensemble	2
MUSC 3470	Major Practical Study	6
MUSC 3960	Music of the 20th Century 1	3
MUSC 3970	Music of the 20th Century 2	3
	Music History elective	3
	Music Theory elective	3
	Non-Music electives	6
Total Credit Hours 31		

<b>Bachelor of Music - Composition</b>		
MUSC 2460	Conducting	3
MUSC 3150	Orchestration	3
MUSC 3180	Ensemble	2
MUSC 3190	Ensemble	2
MUSC 3300	Composition Study	6
MUSC 3650	Electroacoustic Music	3



MUSC 3960	Music of the 20th Century 1	3
MUSC 3970	Music of the 20th Century 2	3
	Non-Music electives	6
Total Credit Hours 31		
<b>Bachelor of Music - General</b>		
MUSC 3180	Ensemble	2
MUSC 3190	Ensemble	2
MUSC 3470	Major Practical Study	6
MUSC 3960	Music of the 20th Century 1	3
MUSC 3970	Music of the 20th Century 2	3
	Music History elective	3
	Music Theory elective	3
	Music or non-music elective	3
	Non-Music electives	6
Total Credit Hours 31		

<b>Bachelor of Jazz Studies</b>		
MUSC 3112	Jazz Composition and Arranging 1	3
MUSC 3182	Jazz Ensemble 3	2
MUSC 3192	Jazz Improvisation 2	2
MUSC 3272	Jazz Performance Skills	3
MUSC 3442	Jazz Pedagogy 1	3
MUSC 3470	Major Practical Study	6
MUSC 3552	Jazz Recital 1	6
Non-Music electives		6
Total Credit Hours 31		
<b>NOTE:</b> A grade of at least "B" is required in 3552 for graduation with the Bachelor of Jazz Studies.		

<b>Integrated Bachelor of Music/Bachelor of Education Program</b>		
MUSC 3180	Ensemble	2
MUSC 3190	Ensemble	2
MUSC 3470	Major Practical Study	6
MUSC 3960	Music of the 20th Century 1	3
MUSC XXXX	Music Specialization	6
EDUB 1200	Teaching the Arts in Senior Years	3
EDUB 1600	Teaching General Music	3
Aboriginal Education Requirement or Special Education/Diversity Requirement	see Aurora calendar for current offerings	3
Teachable Minor		6
Total Credit Hours 34		
Intersession:		
EDUB 1940	Integrated Programs School Experience I	3



**4.4 Fourth Year**

<b>Bachelor of Music - Performance</b>		
MUSC 4180 - Ensemble	2	
MUSC 4190 - Ensemble	2	
MUSC 4470 - Major Practical Study	6	
MUSC 4560 - Recital 2	6	
Music electives	9	
Non-Music elective	6	
Total Credit Hours	31	
<b>NOTE:</b> A grade of at least "B" is required in 4560 for graduation with the Performance Concentration.		
<b>Bachelor of Music - History</b>		
MUSC 4110 - Special Area (Paper)	3	
MUSC 4180 - Ensemble	2	
MUSC 4190 - Ensemble	2	
MUSC 4470 - Major Practical Study	6	
OR		
MUSC 4160 - Major Practical Study	3	
Music History electives	6	
Music electives (9 if MUSC 4160 is elected)	6	
Non-Music electives	6	
Total Credit Hours	31	
<b>Bachelor of Music - Composition</b>		
MUSC 3550 - Recital 1	3	
MUSC 4180 - Ensemble	2	
MUSC 4190 - Ensemble	2	
MUSC 4300 - Composition Study	6	
MUSC 4650 - Interactive Computer Music	3	
MUSC 4660 - Computer Assisted Composition	3	
Music History elective	3	
Music Theory elective	3	
Non-Music Electives	6	
Total Credit Hours	31	
<b>Bachelor of Music - General</b>		
MUSC 4180 - Ensemble	2	
MUSC 4190 - Ensemble	2	
MUSC 4470 - Major Practical Study	6	
OR		
MUSC 4160 - Major Practical Study	3	
Music electives (12 if MUSC 4160 is elected)	9	
Music or Non-Music Electives	6	
Non-Music Electives	6	
Total Credit Hours	31	



<b>Bachelor of Jazz Studies</b>		
MUSC 4112 - Jazz Composition and Arranging 2		3
MUSC 4182 - Jazz Ensemble 4		2
MUSC 4192 - Jazz Improvisation 3		2
MUSC 4442 - Jazz Pedagogy 2		3
MUSC 4470 - Major Practical Study		6
MUSC 4562 - Recital 2		6
Music Elective		3
Non-Music Electives		6
Total Credit Hours 31		
<b>NOTE:</b> A grade of at least "B" is required in 4562 for graduation with the Bachelor of Jazz Studies.		
<b>Integrated Bachelor of Music/Bachelor of Education Program</b>		
MUSC 4180 - Ensemble		2
MUSC 4190 - Ensemble		2
MUSC 4470 - Major Practical Study		6
MUSC 3970 - Music of the 20th Century 2		3
EDUB 2240 - Teaching Music in Senior Years OR		3
EDUB 2160 - Teaching Music in Early/Middle Years		
EDUB 2160 - Teaching Music in Early/Middle Years		3
Aboriginal Education Requirement or Special Education/Diversity Requirement  (whichever requirement was not fulfilled in Year Three)  see Aurora calendar for current offerings		
Music Specialization		12
Teachable Minor		6
Total Credit Hours 37		
Intersession:		
EDUB 1950 - Integrated Programs School Experience 2		3

**4.5 Fifth Year**

<b>Integrated Bachelor of Music/Bachelor of Education Program</b>		
EDUB 2980	Senior Years School Experience	6
EDUA 1800	Psychology of Learning and Instruction 1: Theory and Practice	3
EDUA 1810	School and Society 1: The Foundations of Education	3
EDUB 1990	Teacher and Technology	3
EDUA 2800	Psychology of Learning and Instruction 2: Inclusive Special Education	3
EDUA 2810	School and Society 2: The Administrative Foundations of Education	3
EDUB 2500	Themes in Senior Years Education (for Early/Middle Years specialization, students may take a 3 credit hour Education complementary course)	3
EDUB 2510	Language and Literacy Across the Curriculum (for	3



	Early/Middle Years specialization, students may take a 3 credit hour Education complementary course)	
EDUB 1XXX	Students with a Music teachable minor take an Education Complementary Course. (admitted to Faculty of Education September 2008 or earlier). Students admitted September 2009 and beyond take a Year 1 Curriculum & Instruction Course in their minor area.	3
Total Credit Hours 30		
Further information about the integrated program is in the chapter for the Faculty of Education.		

#### 4.6 Electives: Third and Fourth Years

All Concentrations		
MUSC 3050	Research Methods (History Concentration requirement)	3
MUSC 3090	Introduction to Ethnomusicology	3
MUSC 3100	Opera Repertoire	3
MUSC 3110	Chamber Music Repertoire	3
MUSC 3130	Music for Children 1	6
MUSC 3140	Music for Children 2	6
MUSC 3150	Orchestration (Composition Concentration requirement)	3
MUSC 3230	Acoustics of Music (fulfills University "M" requirement)	3
MUSC 3270	Performance Skills	3
MUSC 3380	From Rock to Rap and Beyond: A History of Popular Music in the Later 20 <sup>th</sup> Century	3
MUSC 3390	From Ragtime to Rock'n'Roll: A History of Popular Music in the 20 <sup>th</sup> Century	3
MUSC 3360	Topics in Music Education	3
MUSC 3370	Topics in Music Education	3
MUSC 3480	Minor Practical Study	3
MUSC 3620	Independent Study 1	3
MUSC 3690	Percussion Techniques	3
MUSC 3730	Early Music Development	3
MUSC 3770	Vocal Techniques	3
MUSC 3780	Woodwind Techniques	3
MUSC 3790	Brass Techniques	3
MUSC 3800	String Techniques	3
MUSC 3820	Topics in Music	3
MUSC 3830	Topics in Music	3
MUSC 3840	Topics in Music	3
MUSC 3850	Topics in Music	3
MUSC 3880	Jazz Ensemble Techniques	3
MUSC 4010	French Diction and Repertoire	3
MUSC 4020	Italian Diction and Repertoire	3
MUSC 4030	German Diction and Repertoire	3
MUSC 4130	History of Women in Music	3
MUSC 4150	Choral Repertoire	3



MUSC 4350	Music for Children 3	6
MUSC 4360	Wind Repertoire	3
MUSC 4370	Wind Conducting Techniques	3
MUSC 4380	Piano Repertoire (Required course for Piano performance majors)	3
MUSC 4390	Piano Chamber Music Literature Seminar	3
MUSC 4430	Pedagogy and Repertoire	3
MUSC 4440	Vocal Pedagogy (Required course for voice majors in Performance and General Concentrations)	3
MUSC 4480	Minor Practical Study	3
MUSC 4490	Piano Pedagogy (Required course for piano and organ majors in Performance and General Concentrations)	3
MUSC 4520	Coaching Skills	3
MUSC 4530	Operatic Piano	3
MUSC 4630	20th to 21st Century Piano Repertoire	3
MUSC 4750	Choral Techniques 1	3
MUSC 4760	Choral Techniques 2	3
MUSC 4770	Band and Orchestral Techniques 1	3
MUSC 4780	Band and Orchestral Techniques 2	3

### General Notes Regarding Electives

Most electives are not offered every year; some are offered every other year and some are offered less frequently. The listing of a subject as an elective does not guarantee that it will always be available or that it will be possible to fit it into all of the many varied timetable combinations of full- and part-time students. There may be a maximum limit set on the number of students permitted to take an elective in a particular session. Similarly, there will be a minimum limit. If registration is below the minimum, the elective will be cancelled for the session, and those registered will be required to transfer to another elective before the course change deadline date. Students are urged to discuss their elective program with members of the faculty toward the end of their second and third years to obtain advice concerning the best choice of electives for their needs. Each year, second-year and third-year students will be asked to complete a questionnaire concerning their choice of electives for the following year.

## SECTION 5: Post-Baccalaureate Diploma in Performance

The Marcel A. Desautels Faculty of Music offers a Post-Baccalaureate Diploma in Performance designed for musicians who wish to further their performance skills in preparation for further study or professional activity. The unique features of the PBDP program are that students can design their own program of study and tailor it to their own areas of interest. They may take courses at the Faculty as well as in other faculties and schools at the University of Manitoba.

### 5.1 Admission Requirements,

Applicants for Admission must submit the completed application form and fee, and must possess a Bachelor of Music degree or a Conservatory Diploma taken in residence. They must also pass an entrance audition, which requires the performance of three works of contrasting styles and/or historical periods appropriate to the audition medium. This audition would normally be held in person, but video auditions may be accepted where distance is a prohibitive factor. Application materials which misrepresent the level of performance ability, will be treated as fraudulent, resulting in dismissal from the program. Admission may not be possible

for all qualified applicants, as it is dependent on number of spaces available, the major practical study area, and instructor availability. Applicants who hold the Post-Baccalaureate Diploma in Performance from the University of Manitoba (or an equivalent Post-Baccalaureate one-year program from another institution) may apply for a second PBDP if studying a different applied instrument than that of their first PBDP in their Major Practical Study, and Recital courses, and if the remaining course credits taken do not duplicate those of the first PBDP.

### 5.2 Admission Procedures,

Application forms may be obtained from the Faculty. Completed application forms must be received by February 15<sup>th</sup> to begin study in September, or June 15<sup>th</sup> for a January start date.

### 5.3 Program Requirements,

MUSC 5400 Major Practical Study, 1 hr. instruction/week or the equivalent, 6 credit hours

MUSC 5560 Recital, 1 hr. instruction/week, 6 credit hours



MUSC 5180 Ensemble, 3 credit hours

Electives: chosen from available 3000 and 4000 level courses recommended by the advisor and approved by the Faculty, 15 credit hours

Total Credit Hours: 30

Note: A minimum of 18 credit hours must be taken in the Marcel A. Desautels Faculty of Music (although all 30 may be taken within the Faculty).

Reminder: While Faculty staff and faculty are available to clarify Faculty and university regulations and degree requirements, it is the student's responsibility to ensure that diploma and program requirements are met.

#### 5.4 Academic Standing,

Regulations for the Post-Baccalaureate Diploma program regarding academic standing, scholastic progress, attendance, required GPA, probation and suspension will follow those governing the Bachelor of Music and Bachelor of Jazz Studies programs as outlined in the Faculty Student Handbook.

#### 5.5 Maximum Time Limits,

Expected time to complete program: 1 year. The maximum time allowed for completing the Post-Baccalaureate Diploma program is 3 years. Students will not be permitted to transfer for credit any course completed more than five years prior to the completion date of the diploma.

#### 5.6 Courses Available,

Undergraduate 3000 and 4000 level courses approved by the Dean may be used as electives in designing the program of study. Students will register for their courses after their program has been determined in consultation with their major practical study teacher who will act as academic advisor during the Post-Baccalaureate Diploma program. Students may not count toward the PBDP any courses that counted for credit in a previous degree.

#### 5.7 Credit Transfer,

The Faculty's Registrar will process transfer of credits into the PBDP program. A maximum of 12 credit hours of courses may be transferred into the PBDP program provided that they have not counted toward any previous degree. A minimum of 18 credit hours must be taken within the Faculty, although up to the full 30 credit hours of the diploma program may be taken within the Faculty. Transfer of credits from the PBDP program into the M.Mus. is processed

through the Faculty of Graduate Studies. Courses may not be counted for more than one degree, and may be transferred from the PBDP to the M.Mus. only if they have not been counted toward the PBDP or more than the minimum credit hours have been taken.

#### 5.8 Completion of the Program,

Minimum: 1 year, Maximum: 3 years. The Dean may grant extensions for medical or compassionate reasons. Medical: A letter from the student's physician stating the diagnosis and treatment with projected recovery. Compassionate: A letter from the student outlining the reasons for the extension showing that extenuating circumstances beyond the student's control have contributed to the need for an extension.

#### 5.9 Assessment,

Student Assessment: Type of evaluation: Academic freedom dictates that there will be variation between classes according to the professor's preferred systems, approaches, materials, readings, and assignments. However, the University of Manitoba regulations as outlined in the General Calendar state that within the first week of lectures, instructors must inform the class of the method of evaluation to be used in each course. Minimum Grade Requirements: In the Faculty students must attain a grade of "C" or higher for a course to count toward a degree, except in the case of Recital where a minimum of "B" is required. The PBDP program will be governed by these regulations, as outlined in the Student Handbook. Should the student transfer to another faculty in the university that faculty's regulations would apply relating to transfer of credit. Successful completion of the program will be achieved by receiving a "C" or higher in 30 credit hours. Teacher Assessment: The SEEQ course evaluations will be used in the PBDP program for academic courses, and the Faculty's specialized forms will be used for the performance-related courses.

## SECTION 6: Offerings for Non-Music Students

### 6.1 Courses Offered in the B.Mus. and B.Jazz Program for Students in Other Faculties,

Some courses are offered outside the B.Mus. and B.Jazz programs for students in other faculties.

### 6.2. Music Minor for Students in the Faculty of Engineering, the Faculty of Arts, and the Faculty of Science,

A Minor in Music is available to students in the Faculty of Engineering, the Faculty of Arts, and the Faculty of Science. The requirements for a Minor in Music for Engineering students can be found in the Faculty of Engineering section of this calendar, the requirements for a Minor in Music for Arts students can be found in the Faculty of Arts section of this calendar. The requirements for a Minor in Music for Science students are as follows:



<b>Minor Option 1</b>			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
MUSC 1280 and MUSC 1290  (At most, 12 credit hours numbered at the 1000 level may be used toward the minor)	12 credit hours of Music courses from List A (Students who elect ensemble courses from List A are required to complete all three courses)		
<b>Minor Option 2</b>			
MUSC 1110 and MUSC 1120  (At most, 12 credit hours numbered at the 1000 level may be used toward the minor)	12 credit hours of Music courses from List A (Students who elect ensemble courses from List A are required to complete all three courses)		
<b>NOTE:</b> Unless otherwise noted, these courses are available to all students in the Faculty of Science who have completed the required prerequisites. Courses in list B are not available to students completing the minor. Ensemble courses (MUSC 2180, MUSC 3180, and MUSC 4180) are acceptable for credit towards a degree in Science only when applied to the minor. They are not acceptable for credit as options.			
Minor Program			
For entry to the minor, the prerequisite is a grade of "C" or better in each of MUSC 1280 and MUSC 1290 or a grade of "C" or better in each of MUSC 1110 and MUSC 1120. A maximum of 12 credit hours numbered at the 1000 level may be used towards 18 credit hours for a minor.			
<b>List A</b>			
Students are responsible for ensuring that all prerequisites have been met.			
MUSC 1050	The Well-Tempered Concert-Goer (3)		
MUSC 1070	Introduction to the History of Music (3)		
MUSC 1080	History of Music 2 (3)		
MUSC 1110	Music Theory 1 (3)		
MUSC 1120	Music Theory 2 (3)		
MUSC 1280	Musical Style and Structure 1 (3)		
MUSC 1290	Musical Style and Structure 2 (3)		
MUSC 2070	History of Music 3 (3)		
MUSC 2080	History of Music 4 (3)		
MUSC 2110	Music Theory 3 (3)		
MUSC 2120	Music Theory 4 (3)		
MUSC 2180**	Ensemble (2)		
MUSC 2460	Conducting (3)		
MUSC 3050	Research Methods (3)		
MUSC 3090	Introduction to Ethnomusicology (3)		
MUSC 3100	Opera Repertoire (3)		
MUSC 3110	Chamber Music Repertoire (3)		
MUSC 3150	Orchestration (3)		
MUSC 3180**	Ensemble (2)		
MUSC 3230	Acoustics of Music (3)		
MUSC 3600	Conducting (3)		
MUSC 3820	Topics in Music (3)		
MUSC 3830	Topics in Music (3)		
MUSC 3840	Topics in Music (3)		



MUSC 3850	Topics in Music (3)
MUSC 3960	Music of the 20th Century 1 (3)
MUSC 3970	Music of the 20th Century 2 (3)
MUSC 4130	History of Women in Music (3)
MUSC 4150	Choral Repertoire (3)
MUSC 4180**	Ensemble (2)
** Acceptable for credit in Science only to those graduating students with a declared Minor in Music.	
<b>List B</b>	
MUSC 1930	Rudiments of Music (3)

### SECTION 7: Music -1000 Level

**MUSC 1050** The Well-Tempered Concert-Goer Cr.Hrs.3 (Formerly 033.105) This course is an introduction to the art of music with the listening component based on attendance at ten live performances by Winnipeg's superior performing ensembles. Topics include instruments of the orchestra, musical materials, forms and structures, historical periods and biographical information on composers.

**MUSC 1070** Introduction to the History of Music Cr.Hrs.3 (Formerly 033.107) Introduction to the study of music history with emphasis on historical and stylistic developments of the Middle Ages and Renaissance.

**MUSC 1080** History of Music 2 Cr.Hrs.3 (Formerly 033.108) A study of the development of style, idiom and performance practise in the music of the 17th and early 18th centuries. Prerequisite: MUSC 1070 (or 033.107) or equivalent, or consent of the Faculty of Music.

**MUSC 1110** Music Theory 1 Cr.Hrs.3 (Formerly 033.111) This course is designed to develop fluency in the writing and recognition of the elements of music: melodic and harmonic intervals, modes and scales, rhythm and metre, triads and inversions, and the principles of melodic and homophonic design. Prerequisite: Knowledge of music rudiments as demonstrated by a Placement Test given during the first week of classes, or by completing MUSC 1930 (or 033.193) with a mark of "C" or better.

**MUSC 1120** Music Theory 2 Cr.Hrs.3 (Formerly 033.112) An examination of the idioms of vocal melody through the writing and analysis of duple paraphrase, duple- and syncopated-rhythm counter-point in two parts, and tonal homophony leading to the Chorale phrase and Bar form. Prerequisite: a grade of "C" or better in MUSC 1110 (or 033.111).

**MUSC 1180** Ensemble Cr.Hrs.2 (Formerly 033.118) Participation in University Symphony Orchestra, University Wind Ensemble, Women's Choir, Bison Men's Chorus, University Jazz Orchestra, University Concert Band or University Singers, as is appropriate to the student's background and/or major applied area (placement to be determined by ensemble committee).

**MUSC 1182** Jazz Ensemble 1 Cr.Hrs.2 Participation in jazz ensemble(s) as assigned by the ensemble committee.

**MUSC 1190** Ensemble Cr.Hrs.2 (Formerly 033.119) Participation in a Faculty of Music Ensemble other than the one designated in MUSC 1180 (or 033.118) (to be chosen in consultation with the Faculty of Music).

**MUSC 1192** Jazz Rhythm Performance Techniques Cr.Hrs.2 A practical approach to rhythmic proficiency in jazz, including emphasis on rhythmic and harmonic etudes, standard song form interpretation, interaction, call and response language for jazz performance.

**MUSC 1280** Musical Style and Structure 1 Cr.Hrs.3 (Formerly 033.128) An integrated study of the history and theory of Western music to 1750. Prerequisite: Canadian Conservatory Grade 4 or RCT Grade 2 Theory or consent of the Faculty of Music. Continuation in the Music Major or Minor requires a grade of C or better in this course.

**MUSC 1290** Musical Style and Structure 2 Cr.Hrs.3 (Formerly 033.129) An integrated study of the history and theory of Western music from 1750 to the present. Prerequisite: MUSC 1280 (or 033.128) . Continuation in the Music Major or Minor requires a grade of "C " or better in this course.

**MUSC 1380** Basic Music Skills 1 Cr.Hrs.2 (Formerly 033.138) A practical approach to the cultivation of critical aural perception: specifically, to develop the student's sight-singing, transcription and keyboard skills.

**MUSC 1390** Basic Music Skills 2 Cr.Hrs.2 (Formerly 033.139) A continuation of MUSC 1380. Prerequisite: MUSC 1380 (or 033.138).

**MUSC 1400** Major Practical Study Cr.Hrs.6 (Formerly 033.140) Individual instruction in one of the following: any of the standard orchestral instruments (strings, woodwinds, brasses, percussion), classical guitar, harp, harpsichord, lute, organ, piano, recorder composition or voice. An important constituent of the grading procedure for this course is performance in, and attendance at, the recitals/concerts of the Faculty of Music. For Music students only.

**MUSC 1460** Minor Practical Study Cr.Hrs.3 (Formerly 033.146) Individual instruction in an area other than that selected for MUSC 1400 (or 033.140) or in composition by special permission. Written consent of the



director is required prior to registration.

**MUSC 1930** Rudiments of Music Cr.Hrs.3  
(Formerly 033.193) An introduction to fundamental aspects of music such as sound generation, notation, melodic and harmonic construction, with emphasis on an aural approach.

## SECTION 7: Music -2000 Level

**MUSC 2070** History of Music 3 Cr.Hrs.3  
(Formerly 033.207) A study of music in the eighteenth century from the Rococo and pre-Classical repertoire through the works of Haydn and Mozart. Prerequisites: MUSC 1070 (or 033.107) and MUSC 1080 (or 033.108) or equivalents, or consent of the Faculty of Music.

**MUSC 2072** Jazz History 1 Cr.Hrs.3  
A broad survey of the development of jazz and early popular styles of the 20th Century up until the early 1950s. This course is designed to reveal the origins of modern jazz and conventional jazz performance practices.

**MUSC 2080** History of Music 4 Cr.Hrs.3  
(Formerly 033.208) A study of the changing styles, forms and contexts of music from the late 18th century to 1915. Prerequisite: MUSC 2070 (or 033.207) and MUSC 2110 (or 033.211) or consent of the Faculty of Music. First offering in the 1998-99 academic year.

**MUSC 2082** Jazz History 2 Cr.Hrs.3  
A broad survey of jazz styles from 1950 to the present, with an emphasis on the development of contemporary performance practices. Prerequisite: MUSC 2072 or consent of the Faculty of Music.

**MUSC 2110** Music Theory 3 Cr.Hrs.3  
(Formerly 033.211) An examination of the idioms of instrumental melody through the writing and analysis of triple paraphrase, triple- and quadruple-rhythm counterpoint in two parts, and chromatic homophony leading to the Minuet and binary form. Prerequisite: MUSC 1120 (or 033.112) or the consent of the Faculty of Music.

**MUSC 2112** Jazz Theory 1 Cr.Hrs.3  
This course is designed to develop fluency in the writing and recognition of the elements of jazz: melodic and harmonic intervals, modes and scales, rhythm and meter, harmonic structure, and the principles of melodic and homophonic design. Prerequisite: MUSC 1120 (or 033.112) or consent of the Faculty of Music.

**MUSC 2120** Music Theory 4 Cr.Hrs.3  
(Formerly 033.212) An examination of the diffusion of tonality in instrumental textures through the writing and analysis of chromatic paraphrase, florid counterpoint in two parts and chromatically-extended homophony leading to the Cavatina and ternary form. Prerequisite: MUSC 2110 (or 033.211) or consent of the Faculty of Music.

**MUSC 2122** Jazz Theory 2 Cr.Hrs.3  
A continuation of Jazz Theory 1. New topics will include transcription analysis, transposition of lead sheets, modal and substitute harmony. Prerequisite: MUSC 2112 or consent of the Faculty of Music.

**MUSC 2180** Ensemble Cr.Hrs.2  
(Formerly 033.218) Participation in University Symphony Orchestra, University Wind Ensemble, Women's Choir, Bison Men's Chorus, University Jazz Orchestra, University Concert Band or University Singers, as is appropriate to the student's background and/or major applied area (placement to be determined by the ensemble committee).

**MUSC 2182** Jazz Ensemble 2 Cr.Hrs.2  
Participation in jazz ensemble(s) as assigned by the ensemble committee. Prerequisite: MUSC 1182 or consent of the Faculty of Music.

**MUSC 2190** Ensemble Cr.Hrs.2  
(Formerly 033.219) Participation in a Faculty of Music Ensemble other than the one designated as appropriate to the student's background and/or major applied area (to be chosen in consultation with the Faculty of Music).

**MUSC 2192** Jazz Improvisation 1 Cr.Hrs.2  
A course designed to give the student practical application of rhythmic devices, rhythmic modes, melodic and harmonic devices, scales, chords, and substitutions in the context of song forms, song fragments, repertoire. The student will be required to keep a journal of melodic devices and original jazz compositions. Prerequisite: MUSC 1120 (or 033.112) or consent of the Faculty of Music.

**MUSC 2380** Basic Music Skills 3 Cr.Hrs.2  
(Formerly 033.238) A continuation of MUSC 1390.

**MUSC 2390** Basic Music Skills 4 Cr.Hrs.2  
(Formerly 033.239) A continuation of MUSC 2380. Prerequisite: MUSC 2380 (or 033.238).

**MUSC 2400** Major Practical Study Cr.Hrs.6  
(Formerly 033.240) Individual instruction, normally in the area chosen in MUSC 1400 (or 033.140). An important constituent of the grading procedure for this course is performance in and attendance at the recitals/concerts of the Faculty of Music. For Music students only.

**MUSC 2460** Conducting Cr.Hrs.3  
(Formerly 033.246) The principles and development of baton technique and expressive gestures. Fundamentals of vocal and instrumental score reading, preparation and interpretation. Prerequisites: MUSC 1120 (or 033.112) or equivalent, or consent of the Faculty of Music.

**MUSC 2480** Minor Practical Study Cr.Hrs.3  
(Formerly 033.248) Individual instruction in an area other than that selected for MUSC 2400. Normally a continuation of MUSC 1460. Written consent of the director is required to register.

## SECTION 7: Music -3000 Level

**MUSC 3050** Research Methods Cr.Hrs.3  
(Formerly 033.305) Techniques of bibliography and expository writing in music. Minor research projects in selected areas; the use of primary and secondary sources.

**MUSC 3090** Introduction to Ethnomusicology Cr.Hrs.3  
(Formerly 033.309) A study of style, performance methods and social role of selected non-Western and indigenous Western music, with particular emphasis on native Canadian



music, through readings in field studies and methodology.

**MUSC 3100** Opera Repertoire Cr.Hrs.3  
(Formerly 033.310) The nature of the opera, its beginnings and development to modern times.

**MUSC 3112** Jazz Composition and Arranging 1 Cr.Hrs.3  
A study of the fundamentals of part writing such as instrumental range and transposition, various styles of unison writing, simple harmonic writing, melodic, harmonic and rhythmic devices along with standard and non-standard song structures. Course will culminate in a recital of student compositions and arrangements. Prerequisite: MUSC 2112 or consent of the Faculty of Music.

**MUSC 3130** Music for Children 1 Cr.Hrs.6  
(Formerly 033.313) The philosophy, techniques and materials in Orff-Schulwerk, including practical activities in the areas of Basic Orff, creative movement, recorder, aural skills and choral techniques. Applicants should have a knowledge of music rudiments. Prerequisite: a grade of "C" or better in MUSC 1930 (or 033.193) or equivalent preparation (CC grade 4 theory; RCT grade 2 theory; an introductory Orff-Schulwerk course) or consent of the Faculty of Music.

**MUSC 3140** Music for Children 2 Cr.Hrs.6  
(Formerly 033.314) Further study of the Orff-Schulwerk approach to music education, including the areas of Basic Orff, creative movement, recorder, aural skills, improvisation and choral techniques. Prerequisite: a grade of "C+" or better in MUSC 3130 (or 033.313) or equivalent preparation, plus consent of the Faculty of Music.

**MUSC 3150** Orchestration Cr.Hrs.3  
(Formerly 033.315) A study of the technical capabilities and tonal characteristics of orchestral instruments, as well as practical scoring and arranging for various groups, from chamber to full orchestra and band. Prerequisite: MUSC 2120 (or 033.212) or consent of the Faculty of Music. Required course for Composition majors.

**MUSC 3180** Ensemble Cr.Hrs.2  
(Formerly 033.318) Participation in University Symphony Orchestra, University Wind Ensemble, Women's Choir, Bison Men's Chorus, University Jazz Orchestra, University Concert Band or University Singers, as is appropriate to the student's background and/or major applied area (placement to be determined by ensemble committee).

**MUSC 3182** Jazz Ensemble 3 Cr.Hrs.2  
Participation in jazz ensemble(s) as assigned by the ensemble committee. Prerequisite: MUSC 2182 or consent of the Faculty of Music.

**MUSC 3190** Ensemble Cr.Hrs.2  
(Formerly 033.319) Participation in a Faculty of Music Ensemble other than the one designated as appropriate to MUSC 3180 (or 033.318) (to be chosen in consultation with the Faculty of Music).

**MUSC 3192** Jazz Improvisation 2 Cr.Hrs.2  
A continuation of Jazz Improvisation 1. Rhythmic devices, rhythmic modes, melodic and harmonic devices, scales, chords and substitutions in the context of song form, song fragments, repertoire. The student will be required to keep a journal of melodic devices and original jazz compositions.

Prerequisite MUSC 2192 or consent of the Faculty of Music.

**MUSC 3230** Acoustics of Music Cr.Hrs.3  
(Formerly 033.323) A study of the physical basis of music; consideration of the nature of musical sound, tone production of typical musical instruments, scales, and temperaments, and architectural acoustics. Experiments and projects.

**MUSC 3270** Performance Skills Cr.Hrs.3  
(Formerly 033.327) For performance majors in the Faculty of Music. Provides training in performance-related skills of the music profession, including such topics as acting, body awareness, self-promotion, career management, master classes, concert organizing, concert promotion and participation.

**MUSC 3272** Jazz Performance Skills Cr.Hrs.3  
A course designed to equip the student with the techniques necessary to rehearse, interact and perform effectively with an ensemble in various situations.

**MUSC 3300** Composition Study Cr.Hrs.6  
(Formerly 033.330) Individual instruction in composition. For Music students only.

**MUSC 3360** Topics in Music Education Cr.Hrs.3  
(Formerly 033.336) This course may vary from year to year depending on the needs and interests of instructors and students.

**MUSC 3380** From Rock to Rap and Beyond: A History of Popular Music in the Later 20th Century Cr.Hrs.3  
(Formerly 033.338) A survey of popular music in North America and Britain from the mid-sixties to the present, beginning with the two foremost bands of the British Invasion, the Beatles and Stones, and the development of folk rock and psychedelic rock. Coverage of the seventies consists of a survey of the various genres of mainstream and album oriented rock while coverage of the eighties juxtaposes the superstars of MTV with radical developments in rap/hip hop and punk/new wave. The nineties focuses on the continual mainstreaming of music on the edge of rap, alternative and world beat.

**MUSC 3390** From Ragtime to Rock'n'Roll: A History of Popular Music in the 20th Century Cr.Hrs.3  
(Formerly 033.339) A survey of popular music in North America from the ragtime craze and Tin Pan Alley tradition, through the development of blues and country to the emergence of Rhythm and Blues and Rock.n.Roll to the beginnings of the .British Invasion..

**MUSC 3442** Jazz Pedagogy 1 Cr.Hrs.3  
A course designed to instruct jazz musicians on procedure and methodology for teaching jazz song form, rhythmic concepts, repertoire and history to K-8 students. Class members will teach and perform with students from the Faculty of Music Preparatory Division.

**MUSC 3470** Major Practical Study Cr.Hrs.6  
(Formerly 033.347) Individual instruction, normally in the area chosen in MUSC 2400 (or 033.240). An important constituent of the grading procedure for this course is performance in and attendance at the recitals/concerts of the Faculty of Music. For Music students only.



**MUSC 3480** Minor Practical Study Cr.Hrs.3  
(Formerly 033.348) Individual instruction in an area other than that selected for Major Practical Study. Normally a continuation of MUSC 2480. Written consent from the Faculty of Music is required prior to registration.

**MUSC 3550** Recital 1 Cr.Hrs.3  
(Formerly 033.355) Prerequisite: consent of the instructor and the director required.

**MUSC 3552** Jazz Recital 1 Cr.Hrs.6  
A performance of works written by the student in Jazz Improvisation and Jazz Composition and Arranging, along with repertoire from Jazz Ensemble classes.

**MUSC 3600** Conducting Cr.Hrs.3  
(Formerly 033.360) Development of the conducting craft including the use of the baton, effective verbal and non-verbal rehearsal skills and practise in score preparation.

**MUSC 3620** Independent Study 1 Cr.Hrs.3  
(Formerly 033.362) Individual project designed by the student and a supervising faculty member. This study may be in an academic or applied area. Approval from the Faculty of Music is required.

**MUSC 3650** Electroacoustic Music Cr.Hrs.3  
An introduction to electroacoustic music composition with the focus on acousmatic music. The course covers sound aesthetics, historical perspective of electro-acoustic music, repertoire and basic studio techniques such as sound editing, digital signal processing, multi channel techniques and sound mixing.

**MUSC 3690** Percussion Techniques Cr.Hrs.3  
(Formerly 033.369) Class instruction in percussion instruments. Development of basic playing techniques and examination of materials and procedures for individual and group instruction.

**MUSC 3730** Early Music Development Cr.Hrs.3  
(Formerly 033.373) Procedures and materials for the development of musicality in children through listening activities, movement, creativity, singing and classroom instruments.

**MUSC 3770** Vocal Techniques Cr.Hrs.3  
(Formerly 033.377) Class instruction in vocal technique. Development of good vocal and choral sound and examination of materials and procedures for individual and group instruction.

**MUSC 3780** Woodwind Techniques Cr.Hrs.3  
(Formerly 033.378) Class instruction in woodwind instruments. Development of music playing techniques and examination of materials and procedures for individual and group instruction.

**MUSC 3790** Brass Techniques Cr.Hrs.3  
(Formerly 033.379) Class instruction in brass instruments. Development of basic playing techniques and examination of materials and procedures for individual and group instruction.

**MUSC 3800** String Techniques Cr.Hrs.3  
(Formerly 033.380) Class instruction in string instruments. Development of basic playing techniques and examination of

materials and procedures for individual and group instruction.

**MUSC 3820** Topics in Music Cr.Hrs.3  
(Formerly 033.382) This course may vary from year to year depending on the needs and interests of instructors and students.

**MUSC 3830** Topics in Music Cr.Hrs.3  
(Formerly 033.383) This course may vary from year to year depending on the needs and interests of instructors and students.

**MUSC 3840** Topics in Music Cr.Hrs.3  
(Formerly 033.384) This course may vary from year to year depending on the needs and interests of instructors and students.

**MUSC 3850** Topics in Music Cr.Hrs.3  
(Formerly 033.385) This course may vary from year to year depending on the needs and interests of instructors and students.

**MUSC 3880** Jazz Ensemble Techniques Cr.Hrs.3  
(Formerly 033.388) Procedures for organizing, rehearsing, and directing small and large group jazz ensembles. Study of repertoire and performance materials, with emphasis on personal understanding of jazz improvisation and style. Prerequisite: enrollment in the B.Mus./B.Ed. integrated program or consent of the Faculty of Music.

**MUSC 3960** Music of the Twentieth Century 1 Cr.Hrs.3  
(Formerly 033.396) An introduction to music written between 1900 and 1945. Works will be examined from both a compositional/theoretical perspective and in terms of their historical/social/philosophical contexts. Prerequisites: MUSC 2120 (or 033.212) and MUSC 2070 (or 033.207) and MUSC 2080 (or 033.208).

**MUSC 3970** Music of the Twentieth Century 2 Cr.Hrs.3  
(Formerly 033.397) A continuation of MUSC 3960, examining works from 1945 to the present. Prerequisites: MUSC 3960 (or 033.396) and MUSC 2120 (or 033.212) or consent of the instructor.

## SECTION 7: Music -4000 Level

**MUSC 4010** French Diction and Repertoire Cr.Hrs.3  
(Formerly 033.401) Specialized instruction in French diction, translation and transcription using the International Phonetic Alphabet, with direct application to performance activities in French vocal repertoire. This course will be rotated on a three-year cycle with MUSC 4020 (or 033.402) and MUSC 4030 (or 033.403).

**MUSC 4020** Italian Diction and Repertoire Cr.Hrs.3  
(Formerly 033.402) Specialized instruction in Italian diction, translation and transcription using the International Phonetic Alphabet, with direct application to performance activities in Italian vocal repertoire. This course will be rotated on a three-year cycle with MUSC 4010 (or 033.401) and MUSC 4030 (or 033.403).

**MUSC 4030** German Diction and Repertoire Cr.Hrs.3  
(Formerly 033.403) Specialized instruction in German diction, translation and transcription using the International



Phonetic Alphabet, with direct application to performance activities in German vocal repertoire. This course will be rotated on a three-year cycle with MUSC 4010 (or 033.401) and MUSC 4020 (or 033.402).

**MUSC 4110** Special Area Paper Cr.Hrs.3  
(Formerly 033.411) The student will select a particular area of special interest or significance, work under supervision of a faculty member, and present results in an extended paper. Prerequisites: MUSC 2120 (or 033.212) and MUSC 2070 (or 033.207), or consent of the Faculty of Music.

**MUSC 4112** Jazz Composition and Arranging 2 Cr.Hrs.3  
A continuation of Jazz Composition and Arranging 1. The student will write for larger ensembles, including jazz orchestra. Course will culminate in a recital of student compositions and arrangements. Prerequisite: MUSC 3112 or consent of the Faculty of Music.

**MUSC 4130** History of Women in Music Cr.Hrs.3  
(Formerly 033.413) A study of the female contribution to the art of music from the Middle Ages to the present; emphasis on the changing roles of, and attitudes towards, women as composers and performers.

**MUSC 4140** History of Canadian Music Cr.Hrs.3  
A survey of music in Canada from Colonial times to the present, encompassing both folk, popular and classical traditions.

**MUSC 4150** Choral Repertoire Cr.Hrs.3  
(Formerly 033.415) A study and examination of choral repertoire suitable for community and church choir.

**MUSC 4160** Major Practical Study Cr.Hrs.3  
(Formerly 033.416) Individual instruction, normally in the area chosen in MUSC 3470 (or 033.347). An important constituent of the grading procedure for this course is performance in and attendance at the recitals/concerts of the Faculty of Music. For Music students only.

**MUSC 4180** Ensemble Cr.Hrs.2  
(Formerly 033.418) Participation in University Symphony Orchestra, University Wind Ensemble, Women's Choir, Bison Men's Chorus, University Jazz Orchestra, University Concert Band or University Singers, as is appropriate to the student's background and/or major applied area (placement to be determined by ensemble committee).

**MUSC 4182** Jazz Ensemble 4 Cr.Hrs.2  
Participation in jazz ensemble(s) as assigned by the ensemble committee. Prerequisite: MUSC 3182 or consent of the Faculty of Music.

**MUSC 4190** Ensemble Cr.Hrs.2  
(Formerly 033.419) Participation in a Faculty of Music Ensemble other than the one designated as appropriate in MUSC 4180 (or 033.418) (to be chosen in consultation with the Faculty of Music).

**MUSC 4192** Jazz Improvisation 3 Cr.Hrs.2  
A continuation of Jazz Improvisation 1 and 2. Rhythmic devices, rhythmic modes, melodic and harmonic devices, scales, intervallic devices, chords, and substitutions in the context of song forms, song fragments, repertoire. The student will be required to keep a journal of melodic devices and original jazz compositions. Prerequisite: MUSC 3192 or

consent of the Faculty of Music.

**MUSC 4300** Composition Study Cr.Hrs.6  
(Formerly 033.430) A continuation of MUSC 3300; under the instructor's supervision, the student will compose a major work intended for performance at the conclusion of the course. For Music students only.

**MUSC 4330** Advanced Analysis Cr.Hrs.3  
A survey of analytical approaches to tonal and post-tonal music. Aspects of musical structure, perception and performance will be explored through readings and the analysis of major works from the core repertoire. Prerequisite: MUSC 2120 or consent of the Faculty of Music.

**MUSC 4350** Music for Children 3 Cr.Hrs.6  
(Formerly 033.435) Advanced study of the Orff-Schulwerk approach to music education. Prerequisite: a grade of "B" or better in MUSC 3140 (or 033.314), plus consent of the instructor.

**MUSC 4360** Wind Repertoire Cr.Hrs.3  
(Formerly 033.436) A selected survey of wind literature from 1500 to the present. Prerequisite: MUSC 4770 (033.477) and MUSC 4780 (033.478), or consent of the Faculty of Music.

**MUSC 4370** Wind Conducting Techniques Cr.Hrs.3  
(Formerly 033.437) A study of the psychological, philosophical and practical aspects of conducting wind ensembles at all levels. (entry to professional). Prerequisite: MUSC 4770 (033.477) and MUSC 4780 (033.478), or consent of the Faculty of Music.

**MUSC 4380** Piano Repertoire Cr.Hrs.3  
(Formerly 033.438) A comprehensive survey of major composers and their compositions for solo Piano. (Required course for piano Performance majors)

**MUSC 4390** Piano Chamber Music Literature Seminar Cr.Hrs.3  
(Formerly 033.439) A selected survey of piano chamber music.

**MUSC 4430** Pedagogy and Repertoire Cr.Hrs.3  
(Formerly 033.443) A consideration of approaches to the teaching of style and technique, through an examination of the repertoire for the student's major practical study.

**MUSC 4440** Vocal Pedagogy Cr.Hrs.3  
(Formerly 033.444) An exploration of the foundations of the singer's art and craft, including the physical nature of the singing voice, stages of development, and various national, historical and individual pedagogical approaches to the teaching of singing. Required course for voice majors in Performance and General concentrations.

**MUSC 4442** Jazz Pedagogy 2 Cr.Hrs.3  
A continuation of Jazz Pedagogy 1, with a focus on high school students. Class members will teach and perform with students from the Faculty of Music Preparatory Division. Prerequisite: MUSC 3442 or consent of the Faculty of Music.

**MUSC 4470** Major Practical Study Cr.Hrs.6  
(Formerly 033.447) Individual instruction, normally in the area chosen in MUSC 3470 (or 033.347). An important constituent of the grading procedure for this course is



performance in and attendance at the recitals/concerts of the Faculty of Music. For Music students only.

**MUSC 4480** Minor Practical Study Cr.Hrs.3

(Formerly 033.448) Individual instruction in an area other than that selected for Major Practical Study. Normally a continuation of MUSC 3480. Written consent of the director is required prior to registration.

**MUSC 4490** Piano Pedagogy Cr.Hrs.3

(Formerly 033.449) An introduction to teaching of styles and techniques through an examination of piano repertoire. (Required course for piano and organ majors in Performance and General Concentrations.)

**MUSC 4520** Coaching Skills Cr.Hrs.3

(Formerly 033.452) Introduction to and training in philosophies and techniques of vocal coaching including both song and operatic repertoire.

**MUSC 4530** Operatic Piano Cr.Hrs.3

(Formerly 033.453) Development of skills required of an operatic pianist, including standard arias, operatic scores, working with conductors and developing an orchestral sound. May include participation in community opera events. (by audition only)

**MUSC 4560** Recital 2 Cr.Hrs.6

(Formerly 033.456) Preparation and performance of a public, full-length graduation recital. The program, which must be approved by the applied instructor and the director, will normally include a major chamber music work.

**MUSC 4562** Jazz Recital 2 Cr.Hrs.6

A performance of works written by the student in Jazz Improvisation and Jazz Composition and Arranging, along with repertoire from Jazz Ensemble classes.

**MUSC 4630** 20th to 21st Century Piano Repertoire Cr.Hrs.3

(Formerly 033.463) Piano repertoire from 1900 to the present.

**MUSC 4650** Interactive Computer Music Cr.Hrs.3

An introduction to interactive computer music composition. The course covers different techniques for interaction between performers and a computer. Experiments will be done using major software for live MIDI and audio processing. The course also covers sound synthesis. Possibilities are given to write with either projects involving performers or multi-disciplinary projects (for example, installation including visual elements).

**MUSC 4660** Computer Assisted Composition Cr.Hrs.3

An introduction to Computer Assisted Composition. The course covers a variety of mathematical models for structuring musical parameters, such as probability, iterative functions, spectral pitch organization, rule-based systems and morphological models. Different environments using the Lisp language are used as a base for experiments.

**MUSC 4750** Choral Techniques 1 Cr.Hrs.3

(Formerly 033.475) Procedures for organizing, rehearsing and conducting various types of choral ensembles. Examination of performance materials.

**MUSC 4760** Choral Techniques 2 Cr.Hrs.3

(Formerly 033.476) Continued study in rehearsing and

conducting standard choral ensembles. Study of repertoire and related literature. Prerequisite: MUSC 4750 (or 033.475).

**MUSC 4770** Band and Orchestral Techniques 1 Cr.Hrs.3

(Formerly 033.477) The historical development and present instrumentation of standard instrumental ensembles. Procedures for organizing, rehearsing and conducting bands and orchestras. Examination of performance and instructional materials.

**MUSC 4780** Band and Orchestral Techniques 2 Cr.Hrs.3

(Formerly 033.478) Continued study in rehearsing and conducting standard instrumental ensembles. Study of repertoire and related literature. Prerequisite: MUSC 4770 (or 033.477).

## SECTION 7: Post-Baccalaureate -5000 Level

**MUSC 5180** Ensemble Cr.Hrs.3

(Formerly 033.518) Participation in a Faculty of Music ensemble as is appropriate to the student's background and/or major applied area. (To be decided by the Major Practical Study Teacher in consultation with the ensemble committee).

**MUSC 5400** Major Practical Study Cr.Hrs.6

(Formerly 033.540) Individual instruction in the instrument area of study at the Post-Baccalaureate level.

**MUSC 5560** Recital Cr.Hrs.6

(Formerly 033.556) Preparation and performance of a public, full-length recital at the Post-Baccalaureate level. The program, must be approved by the applied instructor and the jury committee judging the recital. It should include an appropriate balance of solo and chamber repertoire.



## Faculty of Nursing

**Dean:** Dauna Crooks

**Associate Dean(s):** Undergraduate: Marion McKay

Graduate: Judith Scanlan Research: Diana Clarke

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## SECTION 1: Degree Programs Offered

### 1.1 Programs,

Program/Degree	Years to Complete	Total Credit Hours	Maximum Years to Complete
Four-Year Baccalaureate Nursing Program/Bachelor of Nursing	4*	129	6
Baccalaureate Program for Registered Nurses**/Bachelor of Nursing	2	45	5

\*This includes one year (30 credit hours) of study in University 1.

\*\*This program is designed specifically for active practicing Registered Nurses.

### 1.2 Available Options,

#### Inter-Faculty Option in Aging

Inter-Faculty Option in Aging courses are offered by the following faculties: Arts; Human Ecology; Nursing; Kinesiology and Recreation Management; and Social Work. To complete the Inter-Faculty Option in Aging, students will complete a total of 18 credit hours including each of the following:

- Required Courses (six credits). See the Registration Guide for the current course number being offered.

2.2 Baccalaureate Program for Registered Nurses

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5.1 Four-Year Baccalaureate Nursing Program

5.2 Baccalaureate Program for Registered Nurses

a) IDES 2650 /HMEC 2650/REC 2650/SWRK 2650 The Social Aspects of Aging (3 credit hours)

b) NURS 2610/KIN 2610 Health and Physical Aspects of Aging (3 credit hours)

- Electives (12 credit hours).

a) At least three credits of professional/discipline-specific applied work on aging within the student's faculty of registration; and

b) An additional nine credit hours in aging electives from the participating faculties. Students can take nine credit hours from their own faculty but are encouraged to select offerings



from other faculties. Lists of eligible elective courses are available from the student advisors.

- The nursing option in aging elective is NURS 2200 Topics in Aging.

Upon completion of these requirements, the "Option in Aging" comment will be recorded on the student's transcript. Information on the Inter-Faculty Option in Aging is available from a student advisor.

### 1.3 Professional Designation,

A graduate of the Four-Year Baccalaureate Nursing Program must write the Canadian Registered Nurse Examination (CRNE) to become eligible to practice nursing. Following successful completion of all courses, the Faculty of Nursing provides the College of Registered Nurses of Manitoba (CRNM) with a letter indicating that the student has completed the program requirements and is a potential graduate. Completion of the program entitles students to apply to work as graduate nurses and to apply to write the CRNE to obtain the designation, Registered Nurse (RN). Approval of the application to write the CRNE will be subject to the graduate's meeting the requirements of the CRNM. Application and registration information can be obtained from the CRNM website at: [www.crnmb.ca](http://www.crnmb.ca).

## SECTION 2: Admission Requirements

### 2.1 Four-Year Baccalaureate Nursing Program ,

The following is a summary of the admission requirements. All admission requirements, as well as application deadline dates and forms, are included in an applicant information bulletin that is available from the Admissions Office website at <http://www.umanitoba.ca/student/admissions/>.

#### Courses Completed at Recognized Universities Other Than the U of M

Non-Nursing courses must be assessed as exact equivalents in order to meet the specific course requirements for admission under Option 1 or Option 2. It may not be possible to establish equivalency of courses completed over 10 years prior to application. In those situations, required courses may have to be repeated.

Non-Nursing courses that were completed more than 10 years prior to admission and that have been evaluated by the University of Manitoba can be used in the admission process but will not be considered for transfer credit toward the Nursing degree. Thus, only courses completed within 10 years prior to the date of admission to the Faculty of Nursing will be considered for transfer credit.

All courses (regardless of age) within the most recent 60 credit hours of university level course work will be included in the calculation of AGPA.

The above information also applies to Nursing courses taken at universities other than the U of M; however, Nursing courses will be considered for evaluation and credit only if completed within 5 years prior to application/admission.

See also Section on "Advanced Standing/Transfer Credit".

#### Failures in Nursing Courses

Students who fail the same Nursing course twice, prior to applying to the Faculty of Nursing, are ineligible for admission to the Faculty of Nursing.

#### Course Requirements for Admission

Students must meet the entrance requirements under Option 1 or Option 2, and complete the University Written English requirement to be eligible for admission (see Note 1). All required courses must be at a 1000 level or higher. "0900" level courses (e.g. ENGL 0930) are not accepted for admission or transfer credit.

The AGPA for admission will be calculated on the most recent 60 credit hours (including repeated courses) of university level course work. If an applicant has less than 60 credit hours, the AGPA will reflect all credit hours completed (i.e.: a minimum of 30 credit hours to a maximum of 60 credit hours).

The minimum AGPA of applicants admitted under Option 2 may be significantly higher than for Option 1 applicants. An AGPA higher than the minimum is recommended as admission may be competitive. Preference will be given to Option 1 applicants. The lowest AGPA accepted in 2011-2012 was 3.3824 for Option 1, and 3.80 for Option 2.

**Note 1:** According to University policy, students who have a completed undergraduate degree are exempt from the Written English and math requirements (see appropriate section in Calendar for University policy on written English requirement).

#### Option 1

The above general requirements for admission, and:

All applicants must complete a minimum of 30 credit hours in the following identified courses (or their equivalent) with a minimum grade of "C" in each course before entering the Faculty of Nursing. The University Written English requirement must be met. The minimum Adjusted GPA for admission to the Faculty of Nursing under Option 1 is 2.5. The Faculty of Nursing may admit students from Option 1 with a GPA of 2.0-2.49 (in descending AGPA order) when space is available.

BIOL 1410 Anatomy of the Human Body (formerly ZOO 1320)



BIOL 1412 Physiology of the Human Body (formerly ZOO 1330)

NURS 1260 Human Growth & Development

NURS 1280 Introduction to Nursing

MBIO 1220 Essentials of Microbiology (see Note 6)

3 credit hours of Humanities electives (see Note 2)

6 credit hours of Social Science courses (see Note 3)

6 credit hours of courses offered by the Faculty of Science (see Notes 4, 5, and 6)

**Note 2:** Humanities: English, Philosophy, History, Religion, Languages, Classics, Native Studies, etc. Humanities information is found in the chapter for the Faculty of Arts, Additional Faculty Regulations and Policies section 4.1.1.

**Note 3:** Select from: Introduction to Psychology PSYC 1200 (6), **or** Introduction to Sociology SOC 1200 (6), **or** Human Origins and Antiquity ANTH 1210 (3) and Cultural Anthropology ANTH 1220 (3).

**Note 4:** With the exception of Geological Sciences (GEOL 1XX0), courses under the Clayton H. Riddell Faculty of Environment, Earth, and Resources do not meet the Science elective requirement if taken in 2003-2004 and later. 1000 level introductory Geological Sciences courses (GEOL 1XX0) now offered under the Clayton H. Riddell Faculty of Environment, Earth, and Resources, will be accepted as Science courses if taken prior to September 1, 2006.

**Note 5:** BIOL 1110 [Health and Health Professions] may not be used as a Science elective.

**Note 6:** Science Prerequisites. Students must meet the current Science prerequisites before registration for Science courses. See the chapter for the Faculty of Science for the current prerequisites. It is preferred that the above prerequisites have been completed within the last five years. Math 40S is a prerequisite for Microbiology and Statistics.

#### Option 2

The general requirements for admission, and:

All applicants must have completed at least 30 credit hours. The University written English requirement must be met (see Note 1). A minimum adjusted grade point average of 2.5 is required. A minimum grade of C is required in each of the following courses. Completed courses must include:

1000 level English (3 credit hours)

1000 level Science (3 credit hours)

Undergraduate Calendar

#### Applicants from Diploma and Degree Nursing Programs Category

Applicants who have attended but have not completed a nursing diploma or degree program, the completion of which would result in the graduate's eligibility to write the Canadian Registered Nurse Examination (or equivalent) in order to qualify for registration to practice as a Registered Nurse, must meet admission requirements under Option 1 or Option 2, including the competitive AGPA in the year of application, and provide supplementary information, including the name of the Dean, Director, Head, or Coordinator of the Nursing Program in which the student was previously registered, and who will be contacted by the Faculty of Nursing.

The Admissions Committee reserves the right to deny admission to the University of Manitoba Nursing program based on any of the supplementary information. Applicants who would be eligible to register in third or fourth year courses will be considered for admission only if space is available.

Appeals of decision are limited to the question of procedural regularity only. The merits of the decision are not subject to review.

#### Special Consideration Category

The Special Consideration Category will consider applicants from Aboriginal populations of Canada only. Applicants in this category must meet the minimum entrance requirements of Option 1 including a minimum AGPA of 2.5; however, they do not have to meet the competitive grade point average of admitted students in the admission year. Applicants must complete a supplementary application form that is sent by the Admissions Office following submission of the regular application. The Supplementary Application and information are due no later than June 1.

Detailed information is on the Faculty of Nursing website at:

[http://umanitoba.ca/faculties/nursing/prospective/undergrad/special\\_consideration.html](http://umanitoba.ca/faculties/nursing/prospective/undergrad/special_consideration.html)

Appeals of decisions are limited to the question of procedural regularity only. The merits of the decision are not subject to review.

#### Provisional Admission - Criminal Record, Child Abuse Registry, Immunization and CPR

All successful applicants are admitted provisionally pending compliance with the Criminal Record, Child Abuse Registry, immunization and CPR requirements of the Faculty of Nursing. Failure to meet the requirements by August 1 will result in the offer of admission being revoked. Contact the Faculty of Nursing or [http://umanitoba.ca/faculties/nursing/prospective/media/non\\_acad\\_admission\\_req\\_2012.pdf](http://umanitoba.ca/faculties/nursing/prospective/media/non_acad_admission_req_2012.pdf) for further information about the Non-Academic Admission Requirements.



Applicants are advised to carefully check the recommended start dates in the above document before beginning the process of complying with these admission requirements. Immunization must be started as soon as applicants decide to apply to the program so that the August 1 deadline can be met. Any costs associated with the Non-Academic Admission Requirements are the responsibility of the applicant.

### **Criminal Record Search Certificate**

Following their provisional admission to the program, applicants must provide a Criminal Record Search Certificate, including Vulnerable Persons Search, by August 1. As it can take up to 120 days to obtain these documents, it is recommended that applicants apply for the Criminal Record Search certificate and Vulnerable Sector Search between March 1 and March 15 in the year of application.

A criminal conviction will not necessarily result in denial of admission to the Faculty of Nursing. However, criminal offences will be reviewed by a sub-committee of the Nursing Admissions Committee for the implications of the conviction in view of the professional mandate to protect the public. Failure to disclose any criminal record will invalidate an applicant's application and shall result in automatic expulsion from the Faculty of Nursing if the applicant has been admitted.

The College of Registered Nurses of Manitoba (CRNM) also requires that all graduates of an approved nursing education program who wish to practice nursing in this province disclose information about any conviction for an offence under the Criminal Code (Canada). The review process by the Faculty of Nursing is independent of the review process conducted by the CRNM.

### **Child Abuse Registry Check**

Following their provisional admission to the program, applicants must provide a Child Abuse Registry check by August 1. As it can take up to 120 days to obtain these documents, it is recommended that applicants apply for the Child Abuse Registry check between March 1 and March 15 in the year of application.

Any applicant on the Child Abuse Registry will be denied admission.

### **Immunization**

A complete immunization record is an admission requirement for the program. Applicants provisionally admitted to the program must meet the August 1 deadline for submission of their immunization record or their offer of admission will be revoked. Detailed information about the Immunization admission requirement can be found in the Non-Academic Admission Requirements document found at [http://umanitoba.ca/faculties/nursing/prospective/media/non-acad\\_admission\\_req\\_2012.pdf](http://umanitoba.ca/faculties/nursing/prospective/media/non-acad_admission_req_2012.pdf).

Because it takes a number of months to complete the immunization requirements, it is recommended that all applicants start their immunizations in November prior to application in order to meet the August 1 deadline.

### **CPR Certification**

CPR certification at the Health Care Provider Level (C) is a requirement for admission to the Faculty of Nursing. Certification should not be obtained before April of the year of admission, as it must be valid for the entire academic year. It must be submitted to the Faculty of Nursing by August 1.

### **Advanced Standing/Transfer Credit**

Advanced standing will be considered for courses completed at the University of Manitoba.

Nursing courses from any university, including the University of Manitoba, will be considered for advanced standing/transfer credit only if they have been completed within five years prior to admission to the Faculty of Nursing.

Credit for Nursing courses previously completed as a student in the Faculty of Nursing is not given if there has been a lapse of five years or more since last attendance in the program.

Non-Nursing courses completed at other recognized institutions will be considered if completed within the past 10 years.

See also section on "Courses Completed at Recognized Universities other than the University of Manitoba."

### **Advanced Placement Option: LPN**

Applicants who graduated from the Licensed Practical Nursing (LPN) Program from Assiniboine Community College within five years of admission years prior to admission to the Faculty of Nursing may be eligible for transfer credit. Applicants must meet admission requirements.

### **Advanced Placement Option: RPN**

Registered Psychiatric Nurses may be eligible for advanced standing in the Four-Year Baccalaureate Nursing Program. Applicants should inform the Faculty of their RPN status

**2.2 Baccalaureate Program for Registered Nurses,** All admission requirements for applicants who are already Registered Nurses are described in detail in an applicant information bulletin that includes application deadline dates and application forms. This material is available from the



admissions office website at:

<http://www.umanitoba.ca/student/admissions/>

### Admission Requirements

- 1) Graduation from an approved diploma of nursing education program;
- 2) Current active practicing membership in a Canadian provincial or territorial association/college of registered nurses; and
- 3) A minimum of 1125 hours of nursing experience will normally be required for selection.

The selection of students is based upon academic standing and professional experience. If applications exceed the number of spaces available, the best qualified candidates will be selected.

### Failures in Nursing Courses

Students who fail the same Nursing course twice, prior to applying to the Faculty of Nursing, are ineligible for admission to the Faculty of Nursing.

### Proof of Professional Registration

Active practicing membership must be maintained throughout the program in the Canadian jurisdiction under which the student is a practicing RN. Verification will be obtained annually from the College of Registered Nurses of Manitoba by the Faculty for returning Manitoba students.

Students from outside of Manitoba must submit proof of registration annually from the registering body to the Faculty of Nursing.

After admission and at any time prior to completing the program, students with any changes to their active practicing status with the College of Registered Nurses of Manitoba or other Canadian jurisdiction in which they hold membership, (e.g., conditions placed on a registration or ineligibility for active practicing status), are required to report this information to the Associate Dean, Undergraduate Programs, Faculty of Nursing. Such changes will be reviewed on a case by case basis. Failure to report a change in status may result in disciplinary action.

### Transfer of Credit

University credits earned outside of nursing diploma programs or earned as part of an incomplete degree may be considered for transfer of credit. If a required course in the baccalaureate program was earned as part of a nursing diploma program or as part of another degree, an alternative course must be substituted. Transfer of credit will be considered for university level nursing courses completed within the five years prior to admission. Credit for previous nursing courses is not given if there is a lapse of five years

or more from the last date of attendance in the program or if taken more than five years prior to admission. Credit for non-nursing courses taken at other universities over 10 years prior to admission will not be granted.

Graduates of the Red River College Diploma Nursing Accelerated Program (DNAP) (est. 2000) will receive advanced standing in the Baccalaureate Program for Registered Nurses (BPRN) for the following courses, provided a minimum grade of C+ was achieved in each course for transfer: NURS 3210 Research Methods, NURS 4220 Law and Ethics, and 6 credit hours of non-nursing electives. The Nursing courses must have been completed within five years, and the non-Nursing courses completed within 10 years, prior to admission to the Faculty of Nursing. All remaining courses for the BPRN must be completed at the University of Manitoba in order to meet the residency requirement for the BPRN.

### Transfer of Credit for Advanced Certificate Programs

No credit will be given for these certificates in the BPRN.

## SECTION 3: Academic Regulations

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. In addition, the Faculty of Nursing has regulations and requirements, published below, that apply specifically to its students.

Following the regulations for all students, please see the regulations that are specific to each program.

### 3.1 Regulations for the Four-Year Baccalaureate Nursing Program,

Students are obligated to be familiar with all regulations governing their continued progress in the program.

### Security of Academic Records

The University's policies regarding the security of student academic records are found in the chapter, [University Policies](#), of this Calendar.

### Registration Status in the Program

Students admitted to the Program must complete a minimum of 3 credit hours of course work in the Faculty of Nursing in the Fall or Winter term of their admission year.

Students are expected to maintain contact with the program by registering in at least one nursing course during each consecutive Fall and Winter term while they are enrolled in the Program.



Students who wish to interrupt their studies must apply in writing to the Associate Dean, Undergraduate Programs, for a leave of absence.

#### Leave of Absence

Students wishing to interrupt their studies must submit a written request for a leave of absence, normally by June 1, to the Associate Dean, Undergraduate Programs, Faculty of Nursing. Later requests may be considered in exceptional circumstances. A leave of absence may normally be granted for a maximum period of one year. Requests for an extension to the leave of absence or for a subsequent leave of absence must be made in writing and will be subject to approval by the Associate Dean, Undergraduate Programs.

In order to return to the Faculty of Nursing, students must submit a written request for reinstatement to the Associate Dean, Undergraduate Programs, no later than May 1 of the year of return. Requests for reinstatement will not normally be considered after May 1. Students who do not apply for reinstatement by May 1 will normally be considered as having left the Nursing program, and will be withdrawn from the Faculty of Nursing.

Decisions made in response to requests for leaves of absence or reinstatement can be appealed to the Faculty of Nursing Admissions Committee.

Leave of absence status does not extend the program time limit outlined in the Faculty of Nursing regulations. To maintain leave of absence status, and not be discontinued from the Faculty of Nursing, students may not attend any other faculty or institution during the period in which the leave of absence is in effect. Students on a leave of absence will be subject to the same Criminal Record and Child Abuse Registry policies as students taking courses and, at the time of requesting a return to studies, will be required to provide a current self-declaration of a criminal record and child abuse registry listing.

Students who attend another faculty or institution while on leave, or who have been withdrawn from the Faculty of Nursing because they were not granted a leave of absence and did not take at least one Nursing course in Fall or Winter term, must re-apply through Admissions should they wish to return.

#### Residence Requirements

See the chapter, [General Academic Regulations and Requirements](#) in this *Calendar*.

#### Coursework and Evaluation

- “0900” Level Courses

Credit will not be given for “0900” courses.

- **University Mathematics and Written English Requirement**

Undergraduate Calendar

The Written English requirement may be satisfied by a course also chosen to meet the Humanities requirement. Students should refer to the [General Academic Regulations and Requirements](#) in this Calendar. The mathematics requirement will be met in Year 2 of Nursing by Statistics STAT 1000.

- **Prerequisite Deficiency**

Students who enroll in courses provisionally pending satisfactory completion of pre- or co-requisites must, if unsuccessful, withdraw or amend their registration accordingly. The Faculty of Nursing reserves the right to not send reminders of the requirement to withdraw.

- **Challenge for Credit**

Students wishing to challenge a course for credit should contact a student advisor.

- **Supplemental Examinations or Tests**

The Faculty of Nursing does not permit supplemental examinations or tests.

- **Academic Progression**

Effective September 2012 for all students:

Students are required to obtain a minimum of “C” grade (2.0) in every course, and a Program GPA of 2.5 in order to graduate. A final grade of “D” in any course taken to complete the degree requirement is considered a failure and is not accepted by the faculty.

Students shall be evaluated at the conclusion of each academic term in which they receive a final grade in a minimum of 6 credit hours of course work, with the assessment being based on the resulting Term Grade Point Average (TGPA) in those courses.

The final term of the Four-Year Baccalaureate Program (NURS 4290) will be excluded from assessment providing the student meets graduation requirements. Students are required to have a minimum Program GPA of 2.5 to be eligible for graduation.

See

[http://umanitoba.ca/faculties/nursing/current/undergrad/policies/assessment\\_policy.html](http://umanitoba.ca/faculties/nursing/current/undergrad/policies/assessment_policy.html) for details and procedures.

- **Good Academic Standing**

A student with a TGPA of 2.5 or higher is in Good Academic Standing.

- **Academic Warning**



The first time a student's TGPA drops below 2.5, the student will receive an Academic Warning.

- **Academic Probation**

The second time that a student's TGPA drops below 2.5, the student will be placed on Academic Probation.

- **Academic Suspension**

The third time that a student's TGPA drops below 2.5, the student will be placed on Suspension. Students who are suspended shall be ineligible to take any courses at the University of Manitoba or on a letter of permission for a minimum of eight and a maximum of 15 calendar months.

A student may apply for reinstatement on academic probation after the term of suspension has been completed.

- **Required to Withdraw**

Students who have been permitted to return from Suspension and whose TGPA drops below 2.5 a fourth time will be Required to Withdraw. Students who are Required to Withdraw are ineligible for re-admission to the Faculty of Nursing.

- **Dean's Honour List**

Students who achieve a minimum Term GPA of 3.5, including courses taken on a Letter of Permission, and who are registered for a minimum of 12 credit hours, will be placed on the Dean's Honour list. The Dean's Honour list will be determined after each term of study.

- **Degree with Distinction**

Students who obtain a Degree GPA of 3.8 and above based on the last 67 credit hours of course work will be eligible for a Degree with Distinction.

- **Voluntary Withdrawal**

Students admitted in September, 2004 and later are allowed only one voluntary withdrawal per nursing course in the Faculty of Nursing.

Students who voluntarily withdraw from a nursing course a subsequent time will have their withdrawal reversed and will be expected to complete the course. Students planning to withdraw from any course are advised to speak with a student advisor regarding the implications of this decision. Any financial implications will be the responsibility of the student.

- **Attendance**

Regular attendance at class is expected of all students in all courses. Attendance in on-line courses will be interpreted as regular and consistent participation in the course. Attendance in the clinical practice/laboratory portions of nursing courses is mandatory to enable the student to satisfy the evaluative criteria of the theoretical and practical components of courses. Students absent from class or practice due to illness may be required to present a certificate of illness. This certificate must be signed by a recognized health care provider. Absence for compassionate reasons is considered on an individual basis. Where absence is involved, make-up time may be required.

A course leader may initiate procedures to debar a student from attending classes and from final examinations and/or from receiving credit where unexcused absences exceed those permitted by faculty regulations.

- **Debarment Policy**

A student may be debarred from class, clinical practice, laboratories, and examinations by action of the Associate Dean, Undergraduate Programs for persistent non-attendance, unsafe clinical practice, and/or failure to produce assignments to the satisfaction of the instructor. Once the debarment process has been initiated, the student will not be able to voluntarily withdraw from the course that is presently under investigation. Students so debarred will have failed that course.

- **Failures in Nursing Courses**

Students will be permitted to repeat a nursing course only once following a failure. Withdrawal from the program will be required following a second failure in the same nursing course or any two clinical courses. Students who fail a Nursing course twice and are required to withdraw from the Faculty of Nursing are ineligible for re-admission to the Faculty of Nursing.

- **Clinical Absence**

Four-Year Baccalaureate Nursing Program students returning following one year or more absence from clinical courses must complete a mandatory demonstration of psychomotor skills competency in the skills lab. Competency must be demonstrated prior to clinical attendance. Students should consult with a student advisor for instructions. Testing must be completed prior to July 1.

- **Failures in Clinical Course Rotations**

Students who fail a rotation of a clinical course in which there are multiple rotations will be debarred from the course immediately following that rotation and will receive a final grade of "F". These students will not be permitted to voluntarily withdraw from the course following receipt of the failed grade.

- **Unsafe Clinical Practice Policy**



The debarment policy will be invoked when the student demonstrated unsafe clinical practice. Unsafe clinical practice involves actions or behaviours which result in adverse effects or the risk of adverse effects to the health and well-being (psychological or physical) of the client, family, staff, faculty, or other students. Unsafe clinical practice is an occurrence, or a pattern of behaviour involving unacceptable risk.

### Clinical Practice

Students enrolled in nursing courses with clinical practice components may not register for any other course during those designated clinical days. Nursing clinical practice may be scheduled during the morning, afternoon or evening. Weekends are also used for some sections in clinical courses.

All students must be registered in all clinical courses for both terms by the specified deadline. Failure to register by this date may prevent accommodation in a clinical course. Current deadlines are published in the Registration Information on the Faculty of Nursing website.

Transportation costs to clinical practice settings are the responsibility of the student.

Every effort will be made to accommodate eligible students who register for clinical courses during the initial registration period. However, spaces in clinical courses are dependent upon the availability of clinical sites, which are determined by health care agencies and the availability of clinical teachers. Therefore, the Faculty cannot guarantee that all students who registered for the course can be accommodated.

### Clinical Agency Requirements

The Faculty of Nursing has contractual arrangements with the agencies in which students are placed for clinical practice. The contracts set out specific expectations regarding the preparation of students prior to their placement in any clinical site and their fitness to practice.

The Faculty of Nursing assists the student to complete the following requirements and further information about how these requirements are met will be provided during Year 2 orientation or during NURS 0500.

#### 1. Personal Health Information Act (PHIA)

PHIA cards are required for clinical practice and will be checked at clinical sites.

#### 2. Non-Violent Crisis Intervention Workshop

#### 3. Electronic Patient Record Training

The following requirements are the responsibility of the student and must be completed independently, according to deadlines established by the Faculty of Nursing. For newly

admitted students, instructions about how to fulfill these requirements is set out in Section 3.1 Admission Requirements. Information set out below is for returning students only.

### 4. Immunizations

Once admitted to the Faculty of Nursing, students are required to maintain an up-to-date immunization status. Deadlines for completion of required vaccines will be established for individual students as needed. Students should keep a copy of their immunization records and retrieve their immunization records from their files upon graduation

#### Penalty for Non-Compliance with Immunization Policy

Returning students, including Joint Baccalaureate Nursing program students from Red River College entering fourth year, who do not comply with the deadlines for completion of their immunizations, will be placed on hold status, which blocks the student from the registration system. Students on hold will be permitted to register in mid-August after all documentation has been received. Students who register in mid-August may not be able to register in some or all of the courses they had originally planned to take, and may experience a delay in completing the program. Hold status also prevents receipt of refunds or histories/transcripts from the Registrar's Office, attending clinical practice and graduation.

### 5. Criminal Record Search Certificate

Some clinical practice sites require that students complete a current or additional Criminal Record Search Certificate prior to the first clinical practice day.

Students charged with or convicted of a criminal offence are required to report this information to the Associate Dean, Undergraduate Programs, Faculty of Nursing. Failure to report a criminal offence may result in dismissal from the program. Criminal offences will be reviewed by the Faculty of Nursing Professional Unsuitability Committee for the implications of the conviction in view of the professional mandate to protect the public.

### 6. Child Abuse Registry

Some clinical practice sites require that students complete a current or additional Child Abuse Registry search check prior to the first clinical practice day.

Students listed on the Child Abuse Registry are required to report this information to the Associate Dean, Undergraduate Programs, Faculty of Nursing. A listing on the Child Abuse Registry or failure to report the listing will result in dismissal from the program.

### 7. Cardiopulmonary Resuscitation Certification (CPR)



All students are required to obtain certification in CPR at the Health Care Provider Level (C). Returning students, including those certified at the Instructor level, must recertify in April/May each year to ensure that their certification is valid for the entire academic year. Proof of re-certification must be submitted annually by June 1 to the Student Services Assistant or designate.

#### **Penalty for Non-Compliance with CPR Policy**

Returning students, including Joint Baccalaureate Nursing program students from Red River College entering fourth year, who do not comply with the deadlines for submission of the CPR re-certification, will be placed on hold status, which blocks the student from the registration system. Students on hold will be permitted to register in mid-August after all documentation has been received. Students who register in mid-August may not be able to register in some or all of the courses they had originally planned to take, and may experience a delay in completing the program. Hold status also prevents receipt of refunds or histories/transcripts from the Registrar's Office, attending clinical practice and graduation.

#### **8. Mask Fit Testing**

Mask-fit test cards are required for clinical practice and will be checked at clinical sites.

#### **Attire for Clinical Practice**

All students are required to wear uniforms, name tags and crests during clinical courses unless given specific instructions not to do so by the agency in which they are placed for clinical practice.

#### **Professional Unsuitability By-Law**

The Senate of the University has approved a by-law granting authority to the Faculty to require a student to withdraw for reasons of professional unsuitability. A student may be required to withdraw from the Faculty when, at any time, the Faculty Council, through the Professional Unsuitability By-Law, believes the student to be unsuited for the profession of nursing, on general considerations of scholarship, professional fitness or professional conduct.

Copies of this by-law may be obtained from the Faculty of Nursing website, [umanitoba.ca/nursing](http://umanitoba.ca/nursing). See chapter, General Academic Regulations and Requirements.

#### **Disciplinary Appeal**

Until the final disposition of a disciplinary appeal, students in the Four-Year Baccalaureate Nursing Program will not be permitted to attend clinical practice or the nursing skills laboratory. At the discretion of the Associate Dean, Undergraduate Programs, Faculty of Nursing, students may be granted permission to attend the lecture component only of a nursing course(s) while awaiting a final disposition of an appeal currently in progress.

#### **3.2 Regulations for the Baccalaureate Program for Registered Nurses,**

Students are obligated to be familiar with all regulations governing their continued progress in the program.

#### **Security of Academic Records**

The University's policies regarding the security of student academic records are found in the chapter, [University Policies](#), of this Calendar.

#### **Registration Status in the Program**

Students admitted to the BPRN must complete a minimum of 3 credit hours of course work in the first or second term following admission (e.g. students admitted for Winter term must complete 3 credit hours in the Winter or Summer term following admission). Admission will be revoked for students who do not complete at least 3 credit hours in their first or second term of study following admission.

Students are expected to maintain contact with the program by registering in at least one nursing course during each consecutive Fall and Winter term while they are enrolled in the Program.

Students who wish to interrupt their studies must apply in writing to the Associate Dean, Undergraduate Programs, for a leave of absence. Refer to section on Leave of Absence for further information.

#### **Program Planning**

Students are expected to meet with a Nursing Student Advisor prior to May 15 to plan their program for the upcoming year. Students who do not meet with the Nursing Student Advisor will be placed on hold status, which blocks the student from the registration system and prevents receipt of refunds or histories/transcripts from the Registrar's Office, and graduation.

#### **Leave of Absence**

BPRN students wishing to interrupt their studies must have completed a minimum of 3 credit hours of course work in the Faculty of Nursing in the Fall or Winter term of their admission year. Students must submit a written leave of absence request to the Associate Dean, Undergraduate Programs, Faculty of Nursing. Leave of absence status does not extend the program time limit outlined in the Faculty of Nursing regulations. To maintain a leave of absence status at the University of Manitoba, students may not attend any other post-secondary institution during the period in which the leave of absence is in effect. See section Transfer of Credit.

#### **Reinstatement**

Students who have withdrawn from the Faculty of Nursing (interrupted their studies without requesting a leave of



absence) must submit a written request for reinstatement to the Associate Dean, Undergraduate Programs. The student advisor will inform the student of the appropriate procedure and advanced standing, if any, that the student may receive. Note: 1) the student who does not attend another faculty or institution and requests, within five years of voluntary withdrawal, to re-enter the Faculty of Nursing will be advised to forward such a request to the Associate Dean, Undergraduate Programs; 2) the student who requests to return to the Faculty of Nursing more than five years after withdrawal must re-apply; 3) the student who has attended another faculty or an institution following withdrawal from Nursing must re-apply. See section 2.1 Advanced Standing/Transfer of Credit. **Note that the BPRN must be completed within five years, including time on a leave of absence.**

#### Residence Requirements

Students are required to complete, with the minimum grade of "C" in each course, at least 32 credit hours of University of Manitoba courses. Of these courses, a minimum of 20 credit hours must be from among those offered by the Faculty of Nursing.

#### Course Work and Evaluation

#### Supplemental Examinations or Tests

The Faculty of Nursing does not permit supplemental examinations or tests.

#### "0900" Level Courses

Credit will not be given for "0900" courses.

#### Prerequisite Deficiency

Students who enrol in courses provisionally pending satisfactory completion of pre- or co-requisites must, if unsuccessful, withdraw or amend their registration accordingly. The Faculty of Nursing reserves the right to not send reminders of the requirement to withdraw.

#### Challenge for Credit

Students wishing to challenge a course for credit should contact a student advisor.

#### Proof of Professional Registration

Verification of registration of returning students will be obtained by the Faculty annually from the College of Registered Nurses of Manitoba. Students not registered with the College of Registered Nurses of Manitoba (CRNM) and continuing in the program must submit proof annually of active practicing status in the Canadian jurisdiction in which they hold membership.

After admission and at any time prior to completing the program, students with any changes to their active practicing status with the CRNM, or other Canadian jurisdiction in which they hold membership (e.g., conditions placed on a registration or ineligibility for active practicing status), are required to report this information to the Associate Dean, Undergraduate Programs, Faculty of Nursing. Such changes will be reviewed on a case by case basis. Failure to report a change in status may result in disciplinary action.

#### Academic Progression

Students will be required to obtain a minimum of "C" grade (2.0) in every course, and a minimum Program GPA of 2.5 in order to graduate. A final grade of "D" in any course taken to complete the degree requirement is considered a failure and is not accepted by the faculty.

Students must have a minimum Degree GPA of 2.5 to proceed in the program. For further information, refer to: Academic Probation - Baccalaureate Nursing Program for Registered Nurses.

#### Dean's Honour List

Students who achieve a minimum Term GPA of 3.5, including courses taken on a Letter of Permission, and who are registered for a minimum of 12 credit hours, will be placed on the Dean's Honour list. The Dean's Honour list will be determined after each term of study.

#### Degree with Distinction

Students who obtain a Degree GPA of 3.8 and above in their program of studies will be eligible for a Degree with Distinction.

#### Academic Probation

Students will be assessed after the Winter term upon completion of a minimum of 18 credit hours. Students failing to achieve the minimum Degree GPA of 2.5 will be placed on probationary status.

Probationary students will be assessed at the end of the Winter term after completion of a minimum of 15 credit hours. Students failing to achieve the minimum Degree GPA of 2.5 will be placed on academic suspension.

#### Academic Suspension

A probationary student who does not achieve the minimum academic standing is required to withdraw from the Faculty of Nursing with the status "academic suspension." While suspended indefinitely, after one year's suspension the student may apply for reinstatement on academic probation.

To request reinstatement following academic suspension, the student should submit a written request before May 1 to the Chair, Student Appeals Committee, Faculty of Nursing.



### **Voluntary Withdrawal**

Students admitted in September, 2004 and later are allowed only one voluntary withdrawal per nursing course in the Faculty of Nursing.

Students who voluntarily withdraw from a nursing course a subsequent time will have their withdrawal reversed and will be expected to complete the course. Students planning to withdraw from any course are advised to speak with a student advisor regarding the implications of this decision. Any financial implications will be the responsibility of the student.

### **Attendance**

Regular attendance at class is expected of all students in all courses. Attendance in on-line courses will be interpreted as regular and consistent participation in the course. Attendance in the clinical practice/laboratory portions of nursing courses is mandatory to enable the student to satisfy the evaluative criteria of the theoretical and practical components of courses. Students absent from class or practice due to illness may be required to present a certificate of illness. This certificate must be signed by a recognized health care provider. Absence for compassionate reasons is considered on an individual basis. Where absence is involved, make-up time may be required.

A course leader may initiate procedures to debar a student from attending classes and from final examinations and/or from receiving credit where unexcused absences exceed those permitted by faculty regulations.

### **Debarment Policy**

A student may be debarred from class, clinical practice, laboratories, and examinations by action of the Associate Dean, Undergraduate Programs for persistent non-attendance, unsafe clinical practice, and/or failure to produce assignments to the satisfaction of the instructor. Once the debarment process has been initiated, the student will not be able to voluntarily withdraw from the course that is presently under investigation. Students so debarred will have failed that course.

### **Failures in Nursing Courses**

Students will be permitted to repeat a nursing course only once following a failure. Withdrawal from the program will be required following a second failure in the same nursing course. Students who fail the same Nursing course twice and are required to withdraw from the Faculty of Nursing are ineligible for re-admission to the Faculty of Nursing.

### **Professional Unsuitability By-Law**

The Senate of the University has approved a by-law granting authority to the Faculty to require a student to withdraw for reasons of professional unsuitability. A student may be required to withdraw from the Faculty when, at any time, the

Faculty Council, through the Professional Unsuitability By-Law, believes the student to be unsuited for the profession of nursing, on general considerations of scholarship, professional fitness or professional conduct.

Copies of this by-law may be obtained from the Faculty of Nursing website, [umanitoba.ca/nursing](http://umanitoba.ca/nursing). See chapter, [General Academic Regulations and Requirements](#).

### **Immunization, CPR, Criminal Record Search Certificate, Child Abuse Registry Check Requirements**

#### **Immunizations**

Immunizations are a requirement mandated by the Regional Health Authorities.

Immunization forms are sent to students upon acceptance into the program. Additional forms are available upon request. New students enrolling in the BPRN must provide proof of current immunizations by August 1 for the Fall term, December 1 for the Winter term, and April 15 for the Summer term. See Penalty for Non-Compliance of Immunization and CPR section. Students should keep a copy of their immunization records and retrieve their immunization records from their files upon graduation.

#### **Cardiopulmonary Resuscitation Certification (CPR)**

All students must be certified at the Health Care Provider Level (C). Newly admitted students must submit proof of certification to the Student Services Assistant or designate by August 1 for the Fall term, December 1 for the Winter term, and April 15 for the Summer term. Thereafter, registered nurses are to maintain current certification at the required level.

#### **Penalty for Non-Compliance of Immunization and CPR**

Students who do not comply with the deadlines for proof of current CPR and/or immunizations will be placed on hold status, which blocks the student from the registration system. Students on hold status will be permitted to register after all documentation has been received. Hold status also prevents receipt of refunds or histories/transcripts from the Registrar's Office, attending clinical practice and graduation. Students who register after the initial registration period may not be able to register in some or all of the courses they had originally planned to take, and may experience a delay in completing the program.

#### **Criminal Record Search/Child Abuse Registry Check**

Students are required to hold active registration with the CRNM which further requires a yearly self-declaration of any criminal charges or convictions. In addition, at any time prior to completing the BPRN (regardless of admission date), students charged with, or convicted of, a criminal offence or listed on the Child Abuse Registry are required to report this information to the Associate Dean, Undergraduate Programs, Faculty of Nursing. Failure to report a criminal



offence may result in dismissal from the program. Criminal offences will be reviewed by the Faculty of Nursing for the implications of the conviction in view of the professional mandate to protect the public. A listing on the Child Abuse Registry or failure to report the listing will result in dismissal. In addition, please note that some clinical practice sites require that students complete a Criminal Record Search and/or a Child Abuse Registry check.

### Name Tags

Students are required to wear a University of Manitoba Faculty of Nursing name tag during clinical/project courses when meeting with patients or clients.

## SECTION 4: Program and Graduation Requirements

### 4.1 Four-Year Baccalaureate Nursing Program – Curriculum

The program can be done by part-time and full-time study.

All courses from any given year are to be completed before proceeding to the next year.

#### Course No.

<b>University 1</b>	30 credit hours	
BIOL 1410	Anatomy of the Human Body (see Note 1)	3
BIOL 1412	Physiology of the Human Body (see Note 1)	3
NURS 1260	Human Growth and Development	3
NURS 1280	Introduction to Nursing	3
MBIO 1220	Essentials of Microbiology (see Note 1)	3
	Social Science (6 credits - see Note 1)	6
PSYC 1200	Introduction to Psychology (6)	
	or	
SOC 1200	Introduction to Sociology (6)	
	or	
ANTH 1210	Human Origins and Antiquity (3)	
	and	
ANTH 1220	Cultural Anthropology (3)	
	Science (6 credits from the Faculty of Science, see Notes 1, 3, 4 & 5)	6
	Humanities Elective (see Notes 1,2 & 6)	3

**Note 1:** All courses can be completed in University 1, or an equivalent program, if students do not wish to extend their program of study.

**Note 2:** Humanities. English, Philosophy, History, Religion, Languages, Classics, Native Studies, etc. Humanities information is found in the chapter for the Faculty of Arts, Additional Faculty Regulations and Policies section 4.1.1.

**Note 3:** Science Prerequisites. Students must meet the current Science prerequisites before registration for Science courses. See the chapter for the Faculty of Science for the current prerequisites. It is preferred that the above prerequisites have been completed within the last five years.

**Note 4:** With the exception of Geological Sciences (GEOL 1XX0), courses under the Clayton H. Riddell Faculty of Environment, Earth, and Resources do not meet the Science elective requirement if taken in 2003-2004 and later. 1000 level introductory Geological Sciences courses (GEOL 1XX0) now offered under the Clayton H. Riddell Faculty of Environment, will be accepted as Science courses if taken prior to September 1, 2006.

**Note 5:** The course, BIOL 1110 Health and Health Professions, may not be used as a Science elective. It may, however, be used as an elective from year 4, provided that the level requirements of all electives are met.

**Note 6:** Six credits of the twelve credits of electives including the Native Studies and the Humanities electives, must be at the 2000 level or above. Students should check for pre-requisites for 2000 and 3000 level Native Studies courses.

<b>Year 2</b>	31 credit hours	
STAT 1000	Basic Statistical Analysis 1	3
NURS 2120	Nursing Health Assessment	4
NURS 2130	Nursing Skills Laboratory	2
NURS 2180	Clinical Nursing Practice 1	3
NURS 2190	Clinical Nursing Practice 2	3
NURS 2220	Pharmacology in Nursing Practice	3
NURS 2230	Health Promotion of Older Adults and Their Families	4
NURS 2240	Health Promotion of Child Bearing and Child Rearing Families	6
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
<b>Year 3</b>	29 credit hours	
NURS 3210	Nursing Research Methods	3
NURS 3280	Nursing Skills Laboratory	2
NURS 3290	Health Restoration in Nursing	6
NURS 3300	Clinical Nursing Practice 3	3



NURS 3310	Health Maintenance in Nursing	6
NURS 3320	Clinical Nursing Practice 4	3
NURS 3450	Introduction to Legal and Ethical Foundations of Nursing Practice	3
	Elective – Department of Native Studies – selected options available (see Note 6):	3
NATV 1220	Native Peoples of Canada, Part I (3)	
	Or	
NATV 1240	Native Peoples of Canada, Part II (3)	
	Or	
NATV 2020	Metis of Canada (3)	
	Or	
NATV 2220	Native Societies and the Political Process (3)	
	Or	
NATV 2450	Images of Indian People in North American Society (3)	
	Or	
NATV 3240	Native Medicine and Health (3)	
<b>Year 4</b>	<b>29 + 10 credit hours</b>	
	TERM A (16 credit hours)	
NURS 4250	Palliative Nursing Care	3
NURS 4260	Nursing Care in Mental Health and Illness	3
NURS 4270	Clinical Nursing Practice 5	4
	Electives (see Note 6)	6
	TERM B (13 credit hours)	
NURS 4310	Nursing Leadership: Issues & Practices	4
NURS 4420	Health Promotion in the Community	3
NURS 4430	Clinical Nursing Practice 6	3
NURS 4440	Prevention of Illness	3
	TERM C (10 credit hours)	
NURS 4290	Clinical Practicum (12 weeks)	10

**Reminder: It is the responsibility of the student to ensure that degree requirements are met. It is the responsibility of students to ensure all program requirements have been met before working as a graduate nurse and/or writing the qualifying exams to become a Registered Nurse. In order to be eligible to work as a graduate nurse and/or write the Canadian Registered Nurse Examinations, students must meet all program requirements and requirements of the College of Registered Nurses of Manitoba.**

#### NURS 4290 Clinical Practicum

**All other courses in the curriculum must be successfully completed and the grade posted prior to starting NURS 4290.**

Any costs incurred in completing this course are the responsibility of the student. Proposals must meet the approval of the Faculty of Nursing and must have academic merit. A student's chosen area for completion of practicum experience must be approved by the Faculty of Nursing. The location of the practicum must meet the approval of the University of Manitoba. The location of the practicum is subject to change in the event approval is not received. There may be organizations which require contractual arrangements with the student and/or University of Manitoba prior to permitting the student to enter into the practicum experience. There is no guarantee the University of Manitoba will enter into such contractual arrangements to permit the student to carry out practice at a particular agency or site. In such cases, the student should be prepared to choose an alternate agency or site.

#### 4.1.1 Courses Which May be Used as Electives

Electives are to be taken from Arts, Science, professional faculties or the Inter-Faculty Option in Aging (18 credit hours). (See section 1.2). Of the total credit hours of

electives, at least 6 credit hours must be at the 2000 level or higher. Electives offered by the Faculty of Nursing are:

Course No.	Topics in Aging
NURS 2200	Women and Health
NURS 3330	Providing Care in a Culturally Diverse Society
NURS 3340	Counselling Skills for Nurses
NURS 3350	Men's Health: Concerns, Issues and Myths
NURS 3400	These "NURS" courses may be taken as electives only, and are not an alternative
	Each course is normally offered every second year.
	Inter-Faculty Option in Aging – See Section 1.2

#### 4.2 Baccalaureate Program for Registered Nurses (BPRN)

4.2 Baccalaureate Program for Registered Nurses (BPRN), The Faculty of Nursing BPRN was developed to recognize and value the knowledge and experience of practicing Registered Nurses. The learner-centred, process curriculum is designed to further the capacity of Registered Nurse practice in an ever-changing and increasingly complex health care system.

The curriculum consists of a minimum of 33 credit hours in Nursing, and 12 credit hours from Arts, Science or a professional faculty (for a total of 45 credit hours).

Students may elect full-time or part-time study. A variety of community settings are utilized for clinical experience.



Courses may be offered in late afternoons or evenings, during Summer session and through distance education (correspondence) or internet-based study.

Students graduating with the minimum of 45 credit hours of coursework will be considered on an individual basis for admission to the graduate program in Nursing (Master of Nursing). For further information, contact the Faculty of Nursing, 474-7452.

#### 4.2.1 Special Student Status in Nursing

Students who are not admitted to the BPRN may be eligible to apply to the Faculty of Nursing as a special student. Once admitted, students may register in University of Manitoba courses. Following are the guidelines for special student status:

- Special Students are allowed to register for a maximum of 15 credit hours.
- Special Students must obtain a minimum of "C" grade in a course in order to transfer credit into the BPRN.

#### 4.2.2 BPRN - Curriculum

Note: Nursing electives may not be offered every year.

Course No.	Core Courses:	
NURS 3430	Seminar in Professional Nursing Foundations (see Note 1)	2
STAT 1000	Basic Statistical Analysis 1	3
NURS 3210	Nursing Research Methods	3
NURS 3220	Community Health Nursing 1 (see Notes 4 and 5)	4
NURS 4200	The Teaching-Learning Process in Nursing Practice	3
NURS 4210	Independent Study in Nursing Practice	4
NURS 4220	Law and Ethics in Nursing Practice	3
NURS 4310	Nursing Leadership: Issues and Practices	4
	Nursing Electives (see Note 2)	10
	Non-Nursing Electives (see Note 3)	9

#### Nursing Electives

10 credit hours of acceptable Nursing electives are to be chosen from the following list – at least one course chosen must be a 4 credit hour course.

NURS 2110 Health Assessment of Individuals (3)

NURS 2200 Topics in Aging (3)

NURS 3200 Nursing of Individuals and Families with Long-Term Illness and Disability (4)

NURS 3230 Perspectives on Mental Health Nursing (4)

NURS 3330 Women and Health (3)

- A nursing course completed as a special student may be accepted subsequently for credit in the BPRN up to five years from the date of completion.

Prior to registering for a nursing course, all special students must obtain written permission from a Faculty of Nursing student advisor and present a photocopy of their current Active Practising Membership with the College of Registered Nurses of Manitoba or other jurisdiction.

Completion of courses as a special student does not guarantee admission into the BPRN. All students must complete the application forms and submit required information by the application deadline for the term in which students are applying, unless otherwise indicated at the time of application.

The Faculty of Nursing will allow Registered Nurses admitted to another faculty at the University of Manitoba or another university to register for a maximum of 15 credit hours of nursing courses prior to being admitted to the Faculty of Nursing. Written permission must be obtained from a student advisor and does not guarantee space in the course.

NURS 3340 Providing Care in a Culturally Diverse Society (3)

NURS 3350 Counselling Skills for Nurses (3)

NURS 3390 Nursing in Rural Environments (4)

NURS 3400 Men's Health: Concerns, Issues and Myths (3)

NURS 4160 Community Health Nursing 2 (4)

NURS 4250 Palliative Nursing Care (BPRN specific section only) (3)

In addition, the following courses from the Inter-Faculty Option in Aging are acceptable as Nursing electives:

NURS 2610 / KIN 2610 Health and Physical Aspects of Aging (3)



SWRK 2650/ IDES 2650/ HMEC 2650/ REC 2650 The Social Aspects of Aging (3)

#### NOTES:

1) NURS 3430 should be taken in the first 12 credit hours of the program. Students who have credit for the previous NURS 3190 may substitute this course for NURS 3430.

2) Nursing electives may be used to customize a student's program. Electives may be used to expand on a number of different areas of nursing or may be used to focus on a particular area of nursing practice.

3) Of the 9 credit hours of non-Nursing electives, no more than 6 credit hours may be at the 1000 (introductory) level. See section 5.4 for suggestions re: Non-Nursing Electives for the BPRN. Students may not take courses for credit for which it is assumed that the content was covered in the diploma nursing program (i.e., Anatomy, Physiology, Microbiology, Pharmacology, Psychology, Sociology, etc.).

4) Graduates of the DNA program at Red River College are required to substitute a 4 credit hour Nursing clinical course for NURS 3220.

5) NURS 3360 and NURS 4300 are no longer offered. Students who have previously completed either course within 5 years prior to admission to the Faculty of Nursing may use NURS 3360 in place of NURS 3220 and/or NURS 4300 as a nursing elective.

#### 4.2.3 Clinical Courses and NURS 3200 (Long Term Illness) and NURS 4210 (Independent Study) for the BPRN

Review section 3.1 Regulations for All Students which contains information regarding the Personal Health Information Act (PHIA), immunization and CPR regulations, and other information specific to clinical practice.

A clinical project course (normally designated by the fact that it is a 4 credit hour project based course) involves a heavier workload and time commitment than a 3 credit hour course. For most of these courses, clinical placements/assignments will be arranged between the course leader and student at or prior to the start of a term.

For courses NURS 3200 (Long Term Illness) and NURS 4210 (Independent Study), students must contact the course leader at least **three months prior to the start of classes** to state their intention to register for these courses and to discuss preference of clinical sites. Placement sites will be arranged as requested by the student on a first-come, first-served basis according to the availability of the agency. Registration in these courses is restricted to students who have contacted the course leader.

#### NURS 4210 Independent Study in Nursing

The Independent Study in Nursing is designed to provide the learner with an opportunity to synthesize previous learning while working with a high degree of independence. Under the guidance of a faculty advisor, students explore a topic of their choosing and design learning objectives consistent with the purpose of the course. Students are required to contact the course leader at least 8 weeks prior to the start of the course to select a topic and faculty advisor. The choice of topic, the proposed plan for completion of the Independent Study, and the faculty advisor must all be approved by the Faculty of Nursing.

Information sessions are scheduled, normally in April for the Fall session and in October for the Winter session, to familiarize students with the course. Students should check the Faculty's web page, BPRN section, for announcements about dates and times.

If a practice setting is required as part of the student's learning objectives, the student is responsible for negotiating access to the setting and addressing agency and faculty requirements. Be advised that there may be organizations which require contractual arrangements with the student and/or the University of Manitoba prior to permitting the student to enter the practice setting. These arrangements are subject to approval by the Faculty and require pre-planning.

**Note: the prerequisite for this course is 35 credit hours of completed study in the program.**

#### 4.2.4 Courses Which May be Used as Non-Nursing Electives in the BPRN

Courses may be selected from any faculty or school of the University, subject to faculty/department regulations and subject to the student's meeting any prerequisite requirements. See Note 4 under 4.4 BPRN Curriculum. Some suggestions follow:

Faculty of Arts courses - e.g. anthropology, native studies, psychology, sociology, religion

Faculty of Human Ecology - e.g. human nutritional sciences, family social sciences

Asper School of Business (Management) - e.g. courses in business administration, management, organizational behaviour

Faculty of Kinesiology and Recreation Management

Faculty of Science - e.g. biology, chemistry, computer science, microbiology, zoology

Faculty of Social Work - e.g. courses in social welfare policy, communication skills



### 4.3 Courses Available to Students in Other Faculties

4.3 Courses Available to Students in Other Faculties, Students registered in faculties other than Nursing may take the following Nursing courses without Faculty permission:

NURS 1260	Human Growth & Development
NURS 1280	Introduction to Nursing
NURS 2200	Selected Topics in Aging and Health (see note 1)
NURS 3330	Women and Health (see note 1)
NURS 3400	Men's Health: Concerns, Issues and Myths (see note 1)

#### NOTES:

1) These courses are not intended for first year students.

## SECTION 5: Nursing -1000 Level

**NURS 1260** Human Growth and Development Cr.Hrs.3 (Formerly 049.126) Study of the normal growth and development across the lifespan, with consideration of current physiological and psychological knowledge.

**NURS 1280** Introduction to Nursing Cr.Hrs.3 (Formerly 049.128) The student is introduced to the profession of nursing and to some basic concepts relevant to nursing practice, education and research. Past, present and future roles and functions of the nurse will be explored.

## SECTION 5: Nursing -2000 Level

**NURS 2110** Health Assessment of Individuals Cr.Hrs.3 (Formerly 049.211) The focus is on health assessment of adults including the normal changes which occur in childhood and aging. The course will provide opportunity to learn the health history and physical examination skills essential to health assessment.

**NURS 2120** Nursing Health Assessment Cr.Hrs.4 (Formerly 049.212) This course focuses on the development of nursing theory and skills required to assess and record the physical and psychosocial status of healthy individuals. Age and cultural variations are identified. A basic level of assessment of the family and community will be introduced.

**NURS 2130** Nursing Skills Laboratory Cr.Hrs.2 (Formerly 049.213) Students will learn skills required to assist healthy clients to maintain or improve health. Modifications to the skills required because of age and cultural differences of clients will be identified. Strategies for assisting family care givers to perform selected skills will be incorporated.

**NURS 2180** Clinical Nursing Practice I Cr.Hrs.3 (Formerly 049.218) Students will apply concepts of health promotion and illness prevention to the care of infants, children, adolescents and young adults. The focus is on health related nursing phenomenon and the development of assessment, communication, teaching/facilitative and basic psychomotor skills. Pre or corequisite: NURS 1280 (or 049.128); and NURS 2120 (or 049.212); and NURS 2130 (or 049.213); and NURS 2240.

**NURS 2190** Clinical Nursing Practice II Cr.Hrs.3 (Formerly 049.219) Students will apply concepts of health promotion and illness prevention to the care of healthy and at risk middle aged and elderly adults. The focus is on health risk phenomena and the development of assessment, communication, teaching/facilitative, and basic psychomotor skills. Pre- or corequisite: NURS 1280 (or 049.128); and NURS 2120 (or 049.212); and NURS 2130 (or 049.213); and NURS 2230.

**NURS 2200** Selected Topics in Aging and Health Cr.Hrs.3 (Formerly 049.220) Emphasis will be placed on theory and research related to a current topic in aging and health. Special attention will be directed to integrating concepts and processes of aging. A practicum/field work component will be an integral part of the course. Prerequisite: core courses in the Inter-faculty Option in Aging or permission from the course leader.

**NURS 2210** Primary Care Skills: Comprehensive Health Assessment Cr.Hrs.3 (Formerly 049.221) Students will engage in comprehensive data collection through obtaining a health history and performing a complete physical exam on newborn, pediatric, and adult clients.

**NURS 2220** Pharmacology in Nursing Practice Cr.Hrs.3 (Formerly 049.222) Course introduces students to basic concepts and principles related to pharmacology (pharmacokinetics, pharmacodynamics, pharmacotherapeutics) and the nurses' role in drug therapy. The major classifications of drugs will be examined along with issues arising from the use of drug therapy in contemporary society. Prerequisites: ZOOL 1320 (or 022.132) and ZOOL 1330 (or 022.133).

**NURS 2230** Health Promotion of Older Adults and their Families Cr.Hrs.4 Focuses on the aging changes that occur in older adults and the interaction between aging changes and illness and the resultant presentation of symptoms and functional consequences. Health promotion strategies, including health teaching are highlighted to encourage, maintain and enhance independence, based on the older adult's abilities. Selected teaching/learning models, barriers and motivators, and their application to older adults are discussed.

**NURS 2240** Health Promotion of Child Bearing & Child Rearing Families Cr.Hrs.6 This course provides an overview of health promotion of infants, children, adolescents, and parents within the family context. The focus is on theories, concepts, nursing research, evidence-based nursing practice, and nursing care related to children and families. Prerequisite: ZOOL 1320 (or 022.132), ZOOL 1330 (or 022.133), NURS 1260 (or 049.126) and NURS 1280 (or 049.128). Pre or corequisite:



NURS 2120 (or 049.212).

**NURS 2610** Health and Physical Aspects of Aging Cr.Hrs.3 (Formerly 049.261) An introduction to health, well-being and aging. Emphasis on health as multidimensional including physical, social and mental health. Integration of theory and research in examining selected issues related to health and physical aspects of aging. Students may not hold credit for NURS 2610 (or 049.261) and PHED 2610 (or 057.261). (A required Option in Aging course)

### SECTION 5: Nursing -3000 Level

**NURS 3200** Nursing of Individuals and Families with Long-Term Illness and Disability Cr.Hrs.4 (Formerly 049.320) Nursing of individuals and families of all age groups who require palliative nursing measures or need assistance in adapting to long-term illness. The learner will participate in planning relevant clinical experiences to meet own learning objectives.

**NURS 3210** Nursing Research Methods Cr.Hrs.3 (Formerly 049.321) This course provides an overview of research strategies in nursing with a focus on the acquisition of concepts in order to appraise critically nursing research. Strongly recommended that students complete STAT 1000 (or 005.100) (formerly STAT 2200 (or 005.220)) prior to NURS 3210 (or 049.321).

**NURS 3220** Community Health Nursing I Cr.Hrs.4 (Formerly 049.322) An analysis of concepts of prevention of disease/dysfunction and promotion of health in community based populations. Focus is on primary and secondary prevention and the promotion of health with identified risk groups. Population groups are assessed for risks to their physical and psychosocial health and current preventive and promotive measures analyzed and critiqued. The impact of macro systems in promoting health are discussed. MNHW NURS 3360 (or 049.336).

**NURS 3230** Perspectives on Mental Health Nursing Cr.Hrs.4 (Formerly 049.323) Emphasis will be placed on the mental health needs of individuals and their families who are experiencing mental health problems and/or mental illness. Diverse perspectives on mental health and illness will be explored. A clinical practicum will provide an opportunity to apply mental health nursing principles in community settings.

**NURS 3240** Adult Intensive Care Nursing 1 Cr.Hrs.4 (Formerly 049.324) Focus is on the knowledge, integration and application of major intensive care nursing concepts and theories. Pre- or corequisite: NURS 3440 (or 049.344), formerly PHGY 3240 (or 090.324).

**NURS 3250** Laboratory Practice in Adult Intensive Care Nursing Cr.Hrs.2 (Formerly 049.325) Laboratory course focusing on the acquisition of selected skills associated with the nursing care of critically ill adult patients. Pre- or corequisite: NURS 3240 (or 049.324); NURS 3440 (or 049.344) or 090.324.

**NURS 3260** Clinical Practice in Adult Intensive Care Nursing Cr.Hrs.3 (Formerly 049.326) Selective clinical experience, in adult intensive care settings, is designed to enable the learner to apply critical care theory. Prerequisites: NURS 3240 (or

049.324), NURS 3250 (or 049.325) and NURS 3440 (or 049.344) or 090.324.

**NURS 3280** Nursing Skills Laboratory Cr.Hrs.2 (Formerly 049.328) This course focuses on the development of clinical nursing skills required to assist ill or dying clients. Modifications to the skills required because of age, cultural differences or client preference are identified.

**NURS 3290** Health Restoration in Nursing Cr.Hrs.6 (Formerly 049.329) This course focuses on concepts, issues and research related to nursing care of clients across the lifespan in the acute phase of disease. The impact on the family and community will be explored.

**NURS 3300** Clinical Nursing Practice III Cr.Hrs.3 (Formerly 049.330) Students will apply concepts of health restoration to the care of ill clients of all ages and their families in the acute stage of disease. The focus is on illness related phenomena, critical thinking, the development of the care provider and communicator roles, application of research findings and identification of practice issues. Pre- or corequisite: NURS 3280 (or 049.328); NURS 3290 (or 049.329).

**NURS 3310** Health Maintenance in Nursing Cr.Hrs.6 (Formerly 049.331) This course focuses on concepts, issues and research related to nursing care of individuals across the lifespan who require health maintenance for long term illnesses. The impact on the family and community will be explored.

**NURS 3320** Clinical Nursing Practice IV Cr.Hrs.3 (Formerly 049.332) Students will apply concepts of health maintenance to the care of clients of all ages with long term illness and their families. The focus is on illness related phenomena, analytical thinking, the development of the care provider and communicator roles, application of research findings and identification of practice issues. Pre- or corequisite: NURS 3270 (or 049.327); NURS 3280 (or 049.328); NURS 3310 (or 049.331).

**NURS 3330** Women and Health Cr.Hrs.3 (Formerly 049.333) Introduction to health concepts and issues as they relate to women from a woman's health perspective. Emphasis on enhancing self-care and prevention. Studies the relationship between a woman and the Canadian Health Care System, and appropriate methodology for self-care, vis-a-vis nutrition, reproduction, menarche, menopause, etc. Not to be held for credit with the former 049.423. Caution: This course is not intended for 1st year students.

**NURS 3340** Providing Care in a Culturally Diverse Society Cr.Hrs.3 (Formerly 049.334) This course fosters skills in recognizing and understanding the impact of culture on health related values, beliefs and practices. A culture-general approach is used to develop skills in the provision of nursing care within a culturally diverse society.

**NURS 3350** Counselling Skills for Nurses Cr.Hrs.3 (Formerly 049.335) Builds on the significance of interpersonal skills in nursing practice in health and illness. Examines theoretical basis and practical application of a counselling approach with clients. Students will have a



opportunity for experiential learning.

**NURS 3360** Assessing the Health of Communities Cr.Hrs.4  
(Formerly 049.336) An analysis of concepts of prevention of disease and dysfunction in aggregate and community-based populations in First Nations Communities. MNHW NURS 3220 (or 049.322).

**NURS 3380** Primary Care Skills: Clinical Interventions Cr.Hrs.6  
(Formerly 049.338) Acute and chronic health conditions throughout the lifespan, and as identified in First Nations and Inuit Health Branch's "Scope of Practice" will be addressed through lectures, case studies, student presentations, internet technology and independent learning, basic trauma life support and pediatric life support courses.

**NURS 3390** Nursing in Rural Environments Cr.Hrs.4  
(Formerly 049.339) Emphasis will be placed on the health needs of residents in a rural environment. The nature of nursing and issues encountered in a rural setting, whether in a health care institution or a community health nursing practice are explored. A clinical practicum is an integral part of the course.

**NURS 3400** Men's Health: Concerns, Issues and Myths Cr.Hrs.3  
(Formerly 049.340) An exploration and examination of concerns, issues and myths surrounding men's health and men's health related behaviours. Students will develop a knowledge base for promoting health and preventing illness in men.

**NURS 3430** Seminar in Professional Nursing Foundations Cr.Hrs.2  
(Formerly 049.343) The study and application of academic skills, nursing informatics and theoretical foundations, designed to assist diploma-prepared registered nurses to successfully transition to university and the Baccalaureate Program for Registered Nurses. MNHW NURS 3190 (or 049.319).

**NURS 3440** Principles of Disease Related to Adult Intensive Care Cr.Hrs.3  
(Formerly 049.344) Course focuses on advanced physiology and pathophysiology of the following body systems: cardiovascular, respiratory, neurological, renal and endocrine. May not be held with the former 090.324.

**NURS 3450** Introduction to Legal and Ethical Foundations of Nursing Practice Cr.Hrs.3  
This course will examine the legal and ethical foundations that guide nursing practice. The processes of critical analysis and reasoning will be applied to common legal and ethical dilemmas. Not to be held with the former 049.216.

**NURS 3584** Unallocated Credit Cr.Hrs.3  
Campus Manitoba course.

## SECTION 5: Nursing -4000 Level

**NURS 4160** Community Health Nursing II Cr.Hrs.4  
(Formerly 049.416) Application, integration and synthesis of knowledge and skills in the utilization of the nursing process with families. Development of skills in the process of change with families. Orientation to the concept of prevention and

health promotion as focal concepts in the practice of nursing with families in communities. Pre- or corequisite: NURS 3220 (or 049.322). MNHW NURS 4300 (or 049.430).

**NURS 4170** Issues and Trends in Nursing and Health Care Cr.Hrs.3  
(Formerly 049.417) Study of the forces shaping nursing education, service and research and analysis of current issues in nursing and health care. The learner will develop awareness of professional nursing roles and responsibilities.

**NURS 4190** Leadership in Nursing Practice Cr.Hrs.3  
(Formerly 049.419) Focuses on selected theories of leadership and management. Effective interpersonal behaviour in health care organizations will be examined. The learner will explore own potential to effect change in the health care system.

**NURS 4200** The Teaching-Learning Process in Nursing Practice Cr.Hrs.3  
(Formerly 049.420) Focuses on theories and models of teaching and learning. Principles and strategies for assessing the health/illness learning needs of individuals, groups and communities and for planning, implementing and monitoring the process in nursing situations will be examined. The nursing research base for the process will be explored. Linkages with related nursing concepts will also be demonstrated.

**NURS 4210** Independent Study in Nursing Cr.Hrs.4  
(Formerly 049.421) The learner will have an opportunity to formulate a learning contract to explore, in depth, an area of nursing. This learning contract is to include a major emphasis on the theoretical basis of the selected topic. Prerequisite: 35 credit hours of completed study in the program.

**NURS 4220** Law and Ethics in Nursing Practice Cr.Hrs.3  
(Formerly 049.422) A study of the legal and philosophical bases of the nursing profession and the legal and bioethical issues confronting the professional nurse primarily in the practice setting. A major goal of the course is to draw upon material specific to the professional nurse.

**NURS 4240** Health Promotion in the Community Cr.Hrs.4  
(Formerly 049.424) This course will provide the opportunity to examine concepts, theories, research and nursing roles as they apply to the promotion of health in communities. Relevant theories and research about group process will be incorporated in the analysis of community health issues.

**NURS 4250** Palliative Nursing Care Cr.Hrs.3  
(Formerly 049.425) This course focuses on concepts, issues, research and skills related to the nursing care of individuals across the lifespan who are experiencing irreversible loss. The impact on the family and the community will be emphasized.

**NURS 4260** Nursing Care in Mental Health and Illness Cr.Hrs.3  
(Formerly 049.426) This course deals with the concept of mental health and illness as it applies to individuals across the lifespan. The effect on the individual, the family and the community will be stressed. The student will gain a greater awareness of the self and the therapeutic use of self in the providing of nursing care.



**NURS 4270** Clinical Nursing Practice V Cr.Hrs.4  
(Formerly 049.427) Students will apply nursing concepts and relevant theories and research in the care of clients and their families who are experiencing psychological stress and to those who are dying. The focus is on critical thinking, the development of the communicator, advocate and collaborator roles. Co-requisites: NURS 4250 (or 049.425); NURS 4260 (or 049.426).

completed before proceeding to the next year.

**NURS 4280** Theories in Nursing Practice Cr.Hrs.3  
(Formerly 049.428) This course will enable the student to develop skill in the critical analysis of theories proposed by theorists in nursing and other disciplines. The utility of these theories for nursing practice, education and research will be examined.

**NURS 4290** Clinical Practicum Cr.Hrs.10  
(Formerly 049.429) This course enables students to integrate and critically apply concepts, theories and relevant research to an area of practice and a client group of their choice. Care will address all levels of health, reflect application of a focused body of theory, and consider concepts of leadership, research, ethics, family and community care. Prerequisites: all courses in the program.

**NURS 4300** Promoting Health of Communities Cr.Hrs.4  
(Formerly 049.430) Theoretical and practical application regarding the promotion of health in First Nations Communities. MNHW NURS 4160 (or 049.416).

**NURS 4310** Nursing Leadership: Practice and Issues Cr.Hrs.4  
(Formerly 049.431) The study of the forces shaping nursing leadership and analysis of current issues and trends in nursing and health care. Emphasis will be placed on leadership development within the context of the health care environment now and into the future. MNHW NURS 4170 (or 049.417) or NURS 4190 (or 049.419).

**NURS 4420** Health Promotion in the Community Cr.Hrs.3  
This course will provide the opportunity to examine concepts, theories, research and nursing roles as they apply to the promotion of health in communities. The focus will be on promoting the health of aggregates and communities. Prerequisite: As a general principle, all courses from any given year are to be completed before proceeding to the next year.

**NURS 4430** Clinical Nursing Practice 6 Cr.Hrs.3  
Students will apply relevant concepts, theories, and research in population health promotion, primary health care, and prevention of illness. The focus is on the development of nursing skills to work effectively with aggregates and communities. Prerequisites: NURS 2180 (or 049.218), NURS 2190 (or 049.219), NURS 3300 (or 049.330); and NURS 3320 (or 049.332). Corequisites: NURS 4440 and NURS 4420.

**NURS 4440** Prevention of Illness Cr.Hrs.3  
This course focuses on the concepts of risk reduction and the prevention of illness and injury as they are applied to individuals, groups, and populations. The nurse's role in prevention and the early detection of health risks is highlighted. Issues and research relevant to illness and injury prevention are incorporated. Not to be held with the former NURS 2170 (or 049.217). Prerequisites: As a general principle, all courses from any given year are to be



## Faculty of Pharmacy

**Dean:** Neal Davies

**Associate Dean(s):** Lavern Vercaigne, Yuewen Gong

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**Website:** <http://umanitoba.ca/faculties/pharmacy>

**Academic Staff:** Please refer to the Faculty website for an Academic Staff listing:

[http://umanitoba.ca/faculties/pharmacy/staff/academic\\_staff.html](http://umanitoba.ca/faculties/pharmacy/staff/academic_staff.html)

Pharmacists are specialists in drug therapy and provision of pharmaceutical care. This involves not only the traditional function of preparing and dispensing medications but includes designing and monitoring drug therapy plans to optimize patient care. The Faculty of Pharmacy has been educating pharmacists for over one hundred years. It has dynamic faculty members characterized by their teaching expertise, research programs and practice partnerships in the health sciences. Members of the Faculty are internationally recognized through their participation in research and various committees and agencies. Their research is funded through a variety of sources including, CIHR, NSERC, CRC, various other government agencies, and the pharmaceutical industry.

The undergraduate pharmacy program is meant to prepare students for entry-level practice in the profession of pharmacy by providing them with a solid foundation in the basic, pharmaceutical and clinical sciences which is applied to the concept of pharmaceutical care. In addition, the program is designed to provide students with a broad experience in patient care through the nineteen weeks of practical experience in health orientated health care settings and hospital and community pharmacies. The experience is further enhanced with an open elective program in the final year of studies.

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## SECTION 1: Degree Programs Offered

### Section 1: Pharmacy,

Programs		
Program/Degree	*Years to Complete	*Total Credit Hours
B.Sc. Pharmacy	5	169

\*This includes one year (30 credit hours) of study in University 1. The Total Credit Hours for this program increased from 168 to 169 for the 2012-13 academic year.

#### 1.2 Professional Designation, Manitoba Pharmaceutical Association

Students who are accepted for admission to the Faculty of Pharmacy and have commenced classes in the Faculty shall, before October 31 in the year in which they are admitted to the Faculty, file an application for registration as a student of the Manitoba Pharmaceutical Association. Application forms are obtainable from The Registrar, Manitoba Pharmaceutical Association, 200 Tache Ave., Winnipeg, Manitoba R2H 1A7; telephone, (204) 233-1411 and are also provided at the orientation session. The necessary documents which must accompany the application are indicated on the form.

Full information on the requirements for licensure in the Province of Manitoba is available from the registrar of the Manitoba Pharmaceutical Association.

#### Pharmacy Examining Board of Canada

All applicants for licensure must pass the qualifying examinations of the Pharmacy Examining Board of Canada. The board requires proof of language proficiency. Applicants who did not attend primary and secondary educational institutions where English or French was the principal language of instruction must provide evidence of successful completion of designated language proficiency tests before sitting for the qualifying examinations.

## SECTION 2: Admission Requirements

### 2.1 Course Requirements, (University of Manitoba)

Chemistry CHEM 1300 and CHEM 1310

Biology BIOL 1020 and BIOL 1030

Mathematics MATH 1500, or MATH 1510 or MATH 1520

6 credit hours of Arts electives (of which 3 hours satisfy the University Written English requirement): 0900 courses such as ENGL 0940 are NOT acceptable.

9 credit hours of open electives: 0900 courses such as ENGL 0930 are NOT acceptable.

All admission requirements, as well as application deadline dates and forms, are included in the Applicant Information Bulletin which is available on the University website at: <http://umanitoba.ca/student/admissions/application/programs/pharmacy-application.html>

#### 2.2 Other Requirements , Other requirements

High school prerequisites: Biology 40S, Chemistry 40S, and Pre-Calculus Math 40S (min. 60%).

Minimum GPA for consideration: 3.5. (Please refer to the Faculty of Pharmacy Applicant Information Bulletin for more details.)

The admission process includes a written critical thinking essay/problem solving exercise.

Selection criteria: 70% AGPA, 30% written essay/problem solving exercise. Only students with an essay score of fifteen or more (out of a possible thirty) will be ranked for admission.

#### Criminal Record Check/Child Abuse Registry Check

Many health care agencies where Pharmacy students are placed in a health care setting require a criminal record and/or child abuse registry check. As a result all successful applicants to the Faculty of Pharmacy are now required to provide a self-declaration of a Criminal Record and Child Abuse Registry listing following provisional admission, and subsequently a current, official Criminal Record Search and Child Abuse Registry Check. All documents must be submitted to the Faculty of Pharmacy Dean's Office by the first day of classes. Any applicant on the Child Abuse Registry will be denied admission. A criminal conviction will



not necessarily result in denial of admission to the Faculty of Pharmacy. Criminal offences will be reviewed by a sub-committee of the Pharmacy Admissions Committee for the implications of the conviction in view of the professional mandate to protect the public. Failure to disclose any adult criminal record or listing on the Child Abuse Registry will invalidate an application and shall result in automatic expulsion from the Faculty of Pharmacy if the applicant has been admitted. In addition, the Manitoba Pharmaceutical Association requires that all graduates of the Faculty of Pharmacy who wish to obtain a license to practice pharmacy in this province, must disclose information about any conviction for an offence under the Criminal Code (Canada), the Controlled Drugs and Substances Act (Canada), or the Food and Drugs Act (Canada) in order to be considered for eligibility for registration with the Manitoba Pharmaceutical Association. The review process conducted by the Faculty of Pharmacy is independent of the review process conducted by the Manitoba Pharmaceutical Association.

### Immunization

All students enrolled in the Faculty of Pharmacy must be immunized against the following diseases: diphtheria/tetanus, polio, rubella, measles, mumps, chickenpox, Mantoux/Tuberculosis and hepatitis B. The influenza vaccination is recommended but not required. Students admitted to first year Pharmacy will be provided with an Immunization package at the time of acceptance into the Faculty. Students have the option to complete their immunizations with their own healthcare provider or participate in the Bannatyne Immune Status Program on campus. Students will be required to complete their Immunization Record Form by the end of their first year. Students will not be able to attend clinical rotations until all immunization requirements are up-to-date. Students are responsible for updating their immunizations as needed. Completion of the immunization schedule is required for course progression in Pharmacy.

## SECTION 3: Faculty Academic Regulations

The provisions of the chapter, [General Academic Regulations and Requirements](#), and the chapter, [University Policies](#), apply to all students. In addition, the Faculty of Pharmacy has regulations and requirements, published below, that apply specifically to its students.

### 3.1 Scholastic Progress,

For course progression in the Faculty of Pharmacy students must achieve a minimum combined fall and winter term GPA of 2.0, and attain the minimum passing grade of "C" in each course.

A student in any of the first three years of the pharmacy program who records no more than two grades of "D" during the academic year, and who achieves a minimum combined fall and winter term GPA of 2.00, may at the discretion of the dean be permitted to apply for a supplementary examination in those courses.

A student in the fourth year of the pharmacy program who records no more than one grade of "D" during the academic year, and who achieves a minimum combined fall and winter term GPA of 2.00, may at the discretion of the dean be permitted to apply for a supplementary examination in that course.

Application forms for supplementary examinations are available in the Faculty of Pharmacy Dean's Office, and the examination is subject to a prescribed fee. Supplementary exams will normally take place in the following mid-summer examination session each year.

A student who has failed to record a minimum grade of "C" in more than two courses within years one to three of the pharmacy program, or in more than one course in the fourth year of the pharmacy program, or who records a grade of "F" during the academic year at any stage during their program may not be granted supplementary examinations unless the dean by reason of special circumstances applicable to the student's case otherwise decides.

A candidate who has been allowed to sit for a supplementary examination may not be awarded a grade higher than "C" in that course. Grade calculations for any course following supplementary examination will be inclusive of on-course assessment. Grades achieved following supplementary examination will replace those grades originally recorded on the student's academic record.

A student who fails to achieve a passing grade of "C" in one course, following supplementary examination if that option is offered, and who achieves a minimum combined fall and winter term GPA of 2.00, will be required to repeat that course and may at the discretion of the dean be required to repeat all, or a number of courses in that year.

A student whose combined fall and winter term GPA falls below 2.0, or who fails to achieve a minimum passing grade of "C" in two courses, following supplementary examination if that option is offered, and whose combined fall and winter term GPA remains above 1.75, will be considered to have failed that year, and will be required to repeat all subjects in the following academic year.

The records of all students who fail a year, and the disposition of the cases, shall be reported to Faculty Council for information, but not for debate. Students who have cause to disagree with the disposition may file an appeal against the decision.

A student who fails more than one year in the program, or who fails the same year twice, shall be required to withdraw from the Pharmacy program.

A student who fails to achieve a passing grade in more than two courses in the academic session, or whose combined fall and winter term GPA falls below 1.75, or who fails to achieve a passing grade in a repeated year, will be required to withdraw from the Pharmacy program.



### 3.2 Appeals Concerning Scholastic Progress ,

Should a student wish to appeal against any decision concerning scholastic progress, the following procedure should be followed:

The problem should be discussed with the Associate Dean (Academic) of Pharmacy, who will supply information about the appeals procedure, academic regulations and related matters.

Students who still wish to proceed with an appeal should consult the office of [Student Advocacy](#) for advice and assistance, and a letter of appeal must be sent to the dean within 21 days of receiving notification of the decision. The letter should state the nature of the decision being appealed and the alternative that is being requested.

The Dean will respond in writing to notify the appellant of the date and time the student should attend a meeting of the Faculty Appeals Committee.

The Appeals Committee will comprise: the Dean of the Faculty (or designate) as chair; one senior support staff member as secretary; three members of the full-time faculty appointed by the full-time faculty; a representative of the profession appointed by the Manitoba Pharmaceutical Association; one student member of Faculty Council appointed by the Faculty Council. The chair and senior support staff member are non-voting members.

Appellants have the right to attend the hearing of their appeal and may have a representative to assist them at the appeal hearing. This representative may be the Student Advocate or a fellow student or other full-time member of the university community not receiving payment for appearing, or working for Legal Aid. In addition, if the student wishes, one member of his or her immediate family, and also if desired a lawyer, may be present, but as observers who do not participate. The decision of the Appeals Committee will be conveyed to the student as soon as possible after the hearing.

If the appellant is still dissatisfied they may wish to discuss the issue further with [Student Advocacy](#). Student appellants should not expect a favourable decision when their appeal is based on grounds related to external factors such as employment, sports, or hobbies.

### 3.3 Transfer of Credit Earned Elsewhere ,

Pharmacy students transferring credit from any faculty or school in the University of Manitoba or from other universities or colleges will have each course acceptable for transfer noted on the student record with the course classification of "TR" (transfer). The relevance of courses completed to the student's educational objective at the University of Manitoba and the quality of academic achievement as evidenced by the student's grades will be determining factors in assessing acceptability of credits earned elsewhere. No transfer of credit will be given for courses taken ten years or more prior to the application date. No transfer of credit will be permitted for courses where a "D" grade (or its percentage equivalent) has been awarded.

### 3.4 Residence Requirements ,

A minimum of two years attendance at the university within the Faculty is required for the Bachelor of Science in Pharmacy, except with the permission of the Faculty.

### 3.5 Attendance at Class ,

Regular attendance is required of all students in all courses. Students who are absent from class for a period of three days or more due to illness must present a certificate from a physician to the Dean's Office upon their return. An instructor may initiate procedures to debar a student from attending classes and from final examinations where unexcused absences exceed three continuous sessions. Students must obtain prior approval from the Dean for an absence exceeding one day for reasons other than illness.

### 3.6 Voluntary Withdrawals,

Any student seeking to withdraw from a portion of, or all of their courses must provide written notification to the Dean's Office of the reasons for this request. Re-entry to Pharmacy by students who voluntarily withdraw, will be dependent on the availability of space and external rotation facilities. Any student who has voluntarily withdrawn from a portion of, or all of their courses in Pharmacy on more than one occasion will not be permitted re-entry into the program. Withdrawals for medical or compassionate reasons will not contribute toward this maximum. Students who, for medical reasons, withdraw from the program may not re-register until they have established, through proper medical consultation, their fitness to resume studies.

### 3.7 Deferred Final Examinations,

Students may file an application for a deferred final examination with the Dean for reasons of illness or other disability, or for compassionate reasons, setting out the reasons for the deferral. The application must be filed within seven working days of the end of the examination series in which the examination was scheduled to be written and must be accompanied by a medical certificate or otherwise appropriate documentation certifying the reason for the deferral, the inability of the student to write the examination at the regular scheduled time and, where possible, indicating the period of disability. Based on the evidence provided, the Dean shall decide whether the application is approved. Students who, for medical reasons receive deferred examination privileges for all final examination series may not re-register until they have established, through proper medical consultation, their fitness to resume studies. Any students requesting a deferred examination on the grounds that they are participating in an inter-university, provincial, inter-provincial, national or international scholastic or athletic event shall be granted said deferral, provided an application is filed with the Dean of the Faculty well in advance (normally 20 working days) of the scheduled examination; and that the Dean is satisfied, based on the evidence provided, that the application should be approved and that an appropriate time, and acceptable invigilator is not otherwise available to the student. Any student requesting deferred examination(s) will be required to sign an undertaking that the student has not discussed, reviewed, had access to, or otherwise become aware of the contents of



the deferred examination except as expressly authorized by the instructor or professor for the course in which the deferred examination is being undertaken.

### 3.8 Incompletes,

A student who is unable to complete the term work prescribed in a course may apply to the instructor prior to the end of lectures for consideration of a grade classification of 'Incomplete.' Should an 'incomplete' be granted the student will still be required to write the final examination, if one is scheduled for the course, and a temporary grade of 'IF' will be submitted. In addition to the grade, the recommendation for an 'incomplete' should indicate the reason(s) for consideration being given, a description of the outstanding work to be completed, and the date by which the work must be submitted. If a final grade is not reported by the above maximum extension deadlines, the letter 'I' will be dropped and the grade of 'F' will remain as awarded, unless where specific circumstances warrant, the Associate Dean (Academic) extends the date by which an Incomplete must be cleared. Instructors must formally request such an extension prior to the elapse of the maximum deadline date. In addition, the [Registrar's Office](#) must be notified of the extension.

### 3.9 Dean's Honour List,

Eligible students who achieve a combined fall and winter sessional GPA of 4.0 or higher will be placed on the Dean's Honour List. Eligible students must have completed a minimum of 12.5 credit hours in each of the fall and winter terms. (Exception: Fourth year students must complete a minimum of 10 credit hours during the winter term). The Dean's Honour List designation is not applied until the end of the winter term.

### 3.10 Academic Self-Declaration,

All students accepted into the Faculty of Pharmacy will be required to complete a Self-Declaration of Records Form which declares current or previous academic suspensions and disciplinary actions. The disclosure contained therein must be satisfactory to the Faculty of Pharmacy.

### 3.11 Experiential Training (Structured Practical Experiential Program [SPEP]) ,

Approved Placement Sites are limited, and the University cannot warrant that it will be able to find sufficient suitable placement sites in convenient locations, in a timely manner or at all. Students are responsible for all costs associated with SPEP, including travel and living expenses where placements are outside Winnipeg.

### 3.12 Academic Honesty,

Many courses in the Faculty of Pharmacy require group projects and students should be aware that these are subject to the same rules regarding academic honesty as individual projects. Because of the unique nature of group work, all members of the group should exercise special care to insure that work completed does not violate academic integrity. Should a violation occur, group members will be held jointly

accountable unless the violation can be attributed to a specified individual, or group of individuals.

In the Faculty of Pharmacy all suspected cases of academic dishonesty will be passed to the Dean's Office for evaluation.

### 3.13 Professional Unsuitability By-Law,

The Senate has approved a by-law granting authority to the Faculty to require a student to withdraw for reasons of professional unsuitability. Copies of this by-law may be obtained from the Faculty of Pharmacy Dean's Office.

### 3.14 Completion of the Bachelor Program,

The maximum time allowable for completion of the Bachelor of Science, Pharmacy degree is seven years. Students must successfully complete all of the course work associated with a year in the program prior to being allowed to register for courses in the next year. In certain cases, the dean may grant exceptions to this requirement.

## SECTION 4: Program and Graduation Requirements

### 4.1 Student Responsibility,

Students are advised to carefully review the Faculty of Pharmacy chapter of the *Undergraduate Calendar* to ensure compliance with degree program requirements.

It is the student's responsibility to know all relevant regulations, policies and practices.

### Final completion of degree requirements is the responsibility of the student.

The University of Manitoba Registration System is not a degree audit system and the onus is on students to make sure they are selecting courses appropriate to their academic program.

### 4.2 Registration Assistance,

If you have questions or problems with your registration you can contact the Aurora Student Help Line at (204) 474-9420, or call the Faculty of Pharmacy Dean's Office at (204) 474-9306.

### 4.3 Course Information by Year, First Year Orientation

A mandatory orientation session will be held on Wednesday, September 5, 2012 for 1<sup>st</sup> Year Pharmacy Students. More information on the orientation session will be mailed out in July to all 1<sup>st</sup> year students.

### First Year Students



It is important that you register at your initial access time to guarantee that you get space in the required Science courses. All Pharmacy reserved space in Science will only be held until mid August.

When registering for Chemistry & Microbiology please register in the correct lecture & lab sections that have been reserved for Pharmacy Students.

Fall Term classes commence on Thursday, September 6, 2012. Attend all lectures/laboratories scheduled for that day.

The courses in the first year of the program are as follows:

Course No.		Credit Hours
<b>First Year</b>		
CHEM 2210	Organic Chemistry	3
CHEM 2360	Intermediate Biochemistry	3
CHEM 2370	Intermediate Biochemistry	3
PHRM 1000	Introduction to Pharmacy	1
PHRM 1110	Pharmacy Skills Laboratory (PSL-1)	3
PHRM 1300	Fundamentals of Pharmaceutics	2
PHRM 1430	Applied Pathophysiology for Pharmacy Students	3
PHRM 1700	Structured Practical Experiential Program 1 (SPEP-1)	1
MBIO 1010	General Microbiology	3
ANAT 1030	Human Anatomy	3
PHGY 1030	Fundamentals of Medical Physiology	6
<b>Total Credit Hours</b>		<b>31</b>

### Second Year Students

It is important that you register at your initial access time to guarantee that you get space in the required Science courses. All Pharmacy reserved space in Science will only be held until mid August.

When registering for Microbiology please register in the correct lecture section that has been reserved for Pharmacy Students.

Fall Term classes commence on Thursday, September 6, 2012. Attend all lectures/laboratories scheduled for that day.

**PHRM 2700 (SPEP-2)** – This course falls under the Spring/Summer session guidelines. The Faculty of Pharmacy Dean's Office will register you for this course in March. Fees for PHRM 2700 will be assessed in March 2013.

SPEP-2 will take place May 6, 2013 - May 17, 2013 with a debriefing session to be held on May 17, 2013.

The courses in the second year of the program are as follows:

<b>Second Year</b>		
PHRM 2100	Pharmacy Skills Lab 2 (PSL-2)	3
PHRM 2220	Medicinal Chemistry 1	6
PHRM 2270	Pharmaceutics/Biopharmaceutics	6
PHRM 2280	Pharmacokinetics	3
PHRM 2310	Clinical Pharmacy 1	4
PHRM 2420	Applied Nutrition for Health Professionals	3
PHRM 2700	Structured Practical Experiential Program 2 (SPEP-2)	2
MBIO 3010	Microbiology	3
PHAC 2100	Pharmacology	6
<b>Total Credit Hours</b>		<b>36</b>

### Third Year Students

Register at your initial access time.

Fall Term classes commence on Thursday, September 6, 2012. Attend all lectures/laboratories scheduled for that day.



**Term 2:**

**Classes End:** March 22, 2013  
**Exams:** March 28 - April 4, 2013  
**SPEP 3:** April 8 - May 3, 2013  
 The SPEP-3 debriefing session will be held on May 3, 2013.

**PHRM 3700 (SPEP-3)** – This course falls under the Spring/Summer session guidelines. The Faculty of Pharmacy Dean's Office will register you for this course in

March. Fees for PHRM 3700 will be assessed in March 2013.

The courses in the third year of the program are as follows:

**Third Year**

PHRM 3110	Pharmacy Skills Lab 3 (PSL- 3)	3
PHRM 3230	Principles of Professional Practice	2
PHRM 3220	Medicinal Chemistry 2	3
PHRM 3310	Clinical Pharmacy 2	10
PHRM 3320	Pharmaceutical Analysis Lab	3
PHRM 3430	Natural Products	3
PHRM 3550	Clinical Pharmacokinetics	3
PHRM 3520	Principles of Scientific Literature Evaluation	4
PHRM 3640	Principles of Biotechnology	3
PHRM 3700	Structured Practical Experiential Program 3 (SPEP-3)	4
<b>Total Credit Hours</b>		<b>38</b>

**Fourth Year Students**

Register at your initial access time.

Fall Term classes commence on Tuesday, September 4, 2012. Attend all lectures scheduled for that day.

**Classes End:** Monday, October 29, 2012  
**Exams:** October 30 - October 31, 2012  
**SPEP:** Block 1 November 5 - December 14, 2012  
 Block 2 January 7 – February 15, 2013

Block 3 February 25 – April 5, 2013

**Electives:** Block 1 November 5 - December 21, 2012  
 Block 2 January 7 – February 22, 2013

Block 3 February 25 – April 12, 2013

The courses in the fourth year of the program are as follows:

**Fourth Year**

PHRM 4230	Pharmacy Practice Management	4
PHRM 4310	Clinical Pharmacy 3	4
PHRM 4450	Toxicology	3
PHRM 4470	Current Topics	3
PHRM 4700	SPEP - 4	10
PHRM 4800	Electives Program	10
<b>Total Credit Hours</b>		<b>34</b>

**Total Program Credit Hours: 139**

NOTES:

Students may not obtain any grade lower than "C" in all required courses.



A decision will be made annually on whether these courses will be taught in first or second term, or both.  
therapeutics actions of medicinal compounds.

## SECTION 5:

### PHRM 1000 Introduction to Pharmacy Cr.Hrs.1

(Formerly 046.100) This course provides an orientation to Pharmacy and to the application of medicines within the context of today's dynamic medical care system. It has been designed to highlight professionalism early in the Pharmacy curriculum and will provide the opportunity for students to interact with Pharmacy professionals "at the cutting edge" of pharmacy practice.

### PHRM 1110 Pharmacy Skills Laboratory Cr.Hrs.3

This is a multifaceted course using an integrated skills laboratory format to develop essential skills that students require for pharmacy practice. These skills primarily involve communication, problem solving and critical thinking that form the foundation for life-long learning. Exploring ethical principles and professionalism are also essential components of this course.

### PHRM 1300 Fundamentals of Pharmaceutics Cr.Hrs.2

(Formerly 046.130) In a classroom and laboratory setting, this course provides an introduction to the compounding of pharmaceutical products and the physicochemical basis of product formulation. Practical aspects of formulation and an introduction to the dispensing function are also explored.

### PHRM 1430 Applied Pathophysiology for Pharmacy Students Cr.Hrs.3

(Formerly 046.143) A comprehensive theoretical foundation of the phenomena that produce alterations in human physiology function across the lifespan. Course content will prepare the student for subsequent courses related to diagnosis and management of disease processes associated with pathophysiologic dysfunction/alterations.

### PHRM 1700 Structured Practical Experiential Program 1 Cr.Hrs.1

(Formerly 046.170) This course is a service-learning experience, providing students the opportunity to work in community-based patient/client-centred settings. This course also includes two half day job shadowing experiential rotations in a variety of pharmacy practice settings (eg. community pharmacy practice, institutional pharmacy practice) under the supervision of pharmacist preceptors consistent with the Manitoba Pharmacy Act. It serves to familiarize students with the health care setting and the pharmacist's role. Students will be graded on a pass/fail basis.

### PHRM 2100 Pharmacy Skills Lab 2 Cr.Hrs.3

(Formerly 046.210) This course develops essential skills required for pharmacy practice. Focus is on drug distribution, pharmacy law, communication with "standardized patients" and drug information.

### PHRM 2220 Medicinal Chemistry 1 Cr.Hrs.6

(Formerly 046.222) This course explores the physicochemical aspects of drug structure in absorption, distribution, metabolism, excretion and receptor interaction as they relate to the biochemical, pharmacological, and

**PHRM 2270 Pharmaceutics/Biopharmaceutics Cr.Hrs.6**  
(Formerly 046.227) This course introduces principles of formulation and good pharmaceutical manufacturing practice, including aspects of product development and assessment, stability testing, and quality control. It also explores the application of dosage forms to clinical situations.

### PHRM 2280 Pharmacokinetics Cr.Hrs.3

(Formerly 046.228) This course introduces principles of pharmacokinetics to predict how drugs will be absorbed, distributed, metabolized and excreted from the body. Practical application of concepts and calculations will be emphasized.

### PHRM 2310 Clinical Pharmacy 1 Cr.Hrs.4

(Formerly 046.231) This course introduces principles of drug therapy to manage uncomplicated disease states. Aspects of drug therapy including efficacy, dosage requirements, adverse effects, compliance, drug interactions, and follow-up monitoring will be emphasized. The course also introduces principles of using "over the counter (OTC)" medications as therapeutic alternatives.

### PHRM 2420 Applied Nutrition for Health Care Professionals Cr.Hrs.3

(Formerly 046.242) The application of the scientific principles underlying nutrient function and dietary requirements to questions of health.

### PHRM 2700 Structured Practical Experiential Program 2 Cr.Hrs.2

(Formerly 046.270) This course offers experiential learning in a variety of pharmacy practice settings (eg. community pharmacy practice, institutional pharmacy practice) It consists of 2 one week rotations at the end of the second year of the program. This course builds on skills learned in SPEP 1 and focuses on the practice of drug preparation and distribution, non-prescription medication counseling, and jurisprudence under the supervision of pharmacist preceptors consistent with the Manitoba Pharmacy Act. Students will be graded on a pass/fail basis.

### PHRM 3100 Pharmacy Skills Lab 3 Cr.Hrs.2

(Formerly 046.310) The course develops essential skills required for pharmacy practice. The focus is on interaction with patients and other health care professionals and the application of essential knowledge, skills and values required for the provision of pharmaceutical care.

### PHRM 3110 Pharmacy Skills Laboratory III Cr.Hrs.3

(Formerly PHRM 3100, 046.310) The course develops essential skills required for pharmacy practice. The focus is on interaction with patients and other health care professionals and the application of essential knowledge, skills and values required for the provision of pharmaceutical care. May not be held with PHRM 3100 or 046.310.

### PHRM 3220 Medicinal Chemistry 2 Cr.Hrs.3

(Formerly 046.322) This course builds on Medicinal Chemistry 1, exploring the detailed interactions between drugs and their receptors which give rise to specific



biochemical and therapeutic responses.

**PHRM 3230** Principles of Professional Practice Cr.Hrs.2  
This course offers the opportunity to explore professionalism, ethics and socio-economic aspects of the health care system. May not be held with PHRM 3210.

**PHRM 3310** Clinical Pharmacy 2 Cr.Hrs.10  
(Formerly 046.331) This course builds on principles of drug therapy introduced in Clinical Pharmacy 1. Aspects of providing direct patient care are emphasized to identify, solve and prevent actual or potential drug-related problems. The course also expands knowledge of "Over the Counter (OTC)" medications as therapeutic alternatives and introduces home diagnostic testing

**PHRM 3320** Pharmaceutical Analysis Lab Cr.Hrs.3  
(Formerly 046.332) This course offers the opportunity to prepare pharmaceutical dosage forms and perform analytical testing on the products. Qualitative and quantitative instrumental assay techniques are introduced.

**PHRM 3430** Natural Products Cr.Hrs.3  
(Formerly 046.343) Medicinal products of natural origin; introduction to systems of complementary medicine. Therapeutic aspects and products are emphasized

**PHRM 3500** Clinical Pharmacokinetics Cr.Hrs.4  
(Formerly 046.350) This course explores the practical application of pharmacokinetic concepts, calculations, and patient factors which effect pharmacokinetics in the clinical setting. Emphasis is on selected medications that require closer monitoring to ensure efficacy and patient safety.

**PHRM 3520** Principles of Scientific Literature Evaluation Cr.Hrs.4  
Primary literature is critically analyzed. Discussion of how study results impact on treatment strategies are emphasized. May not be held with PHRM 3510.

**PHRM 3550** Clinical Pharmacokinetics Cr.Hrs.3  
This course explores the practical application of pharmacokinetic concepts, calculations, and patient factors which effect pharmacokinetics in the clinical setting. Emphasis is on selected medications that require closer monitoring to ensure efficacy and patient safety. may not be held with PHRM 3500 or 046.350.

**PHRM 3640** Principles of Biotechnology Cr.Hrs.3  
(Formerly 046.364). Introduction of biotechnology in pharmaceutical science and pharmacy. Students will be introduced to concepts from molecular biology, immunology, biotechnology and pharmacogenomics.

**PHRM 3700** Structural Practical Experiential Program 3 Cr.Hrs.4  
(Formerly 046.370) This course offers experiential learning in a variety of pharmacy practice settings (e.g. community pharmacy practice, institutional pharmacy practice) It consists of 2 two week rotations at the end of the third year of the program. This course builds on skills learned in SPEP 1 and SPEP 2 and focuses on the introduction of applying pharmaceutical care to patients under the supervision of pharmacist preceptors consistent with the Manitoba Pharmacy Act. Students will be graded on a pass/fail basis.

**PHRM 4230** Pharmacy Practice Management Cr.Hrs.4  
(Formerly 046.460) An Introduction to administrative and behavioural sciences as they relate to planning, organization and operation of pharmacy practice and to the control of human and financial resources.

**PHRM 4310** Clinical Pharmacy 3 Cr.Hrs.4  
(Formerly 046.444) A problem-based therapeutics course that builds on PHRM 3310. The emphasis is on the provision of pharmaceutical care to enhance students' ability to identify, resolve and prevent drug-related problems in given clinical scenarios.

**PHRM 4450** Toxicology Cr.Hrs.3  
(Formerly 046.445) Toxicology of prescription and non-prescription medications and drugs of abuse. The emphasis is on the study of emergency treatments of the overdosed patient. Forensic aspects of common poisonings and drug overdoses are also discussed

**PHRM 4470** Current Topics Cr.Hrs.3  
(Formerly 046.447) A discussion of topics of immediate interest to the profession. Subject to satisfactory completion of required projects and presentations. Attendance of 80% is mandatory. Students will be graded pass/fail.

**PHRM 4700** Structural Practical Experiential Program 4 Cr.Hrs.10  
(Formerly 046.461) This course offers experiential learning in a variety of pharmacy practice settings (e.g. community pharmacy practice, institutional pharmacy practice) It consists of 2 six week rotations. This course builds on skills learned in SPEP 1, SPEP 2 and SPEP 3 and focuses on practicing advanced pharmaceutical care and further developing therapeutic and disease knowledge under the supervision of pharmacist preceptors consistent with the Manitoba Pharmacy Act. Students will be graded on a pass/fail basis.

**PHRM 4800** Cr.Hrs.10  
This program offers students the opportunity to explore areas in research and professional practice that are not part of the required undergraduate courses. Students have the option of applying to conduct projects at sites pre-approved by the Faculty or to propose alternative avenues for self-directed learning. All project proposals need to obtain final approval from the Faculty of Pharmacy which facilitates students, placement. Assessment will be based on written reports submitted by individual students to the Faculty of Pharmacy. Students will be graded on a pass/fail basis.



## Faculty of Science

**Dean:** Mark Whitmore

**Associate Dean(s):** Peter Graham, Roy Roshko, Michele Piercey-Normore

**Campus Address/General Office:** 239 Machray Hall

**Telephone:** (204) 474 8256

**Fax:** (204) 474 7618

**Email Address:** [Ask a Science Advisor](#)

**Website:** [umanitoba.ca/science](http://umanitoba.ca/science)

**Academic Staff:** For complete listings of the Faculty of Science Academic Staff, please refer to departmental websites

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## SECTION 1: Degrees and Programs offered by the Faculty of Science

### 1.1 Degree Offerings

Degree Offering Name	Minimum Years to Complete <sup>1</sup>	Minimum Required Credit Hours
Bachelor of Science General Degree - B.Sc. General	3	90
Bachelor of Science Major Degree – B.Sc. Major	4	120
B.Sc. Major Degree – Co-operative Option	5 <sup>3</sup>	120
Bachelor of Science Double Major Degree	4	120 <sup>2</sup>
Bachelor of Science Honours Degree – B.Sc. Honours	4	120 - 129
B.Sc. Honours Degree – Co-operative Option	5 <sup>3</sup>	120
Bachelor of Computer Science Honours – B.C.Sc. Honours	4	120
B.C.Sc. Honours Degree – Co-operative Option	5 <sup>3</sup>	120
Bachelor of Science Double Honours Degree	4	120 <sup>2</sup>

#### NOTES:

1. This number includes one year (24 or more credit hours) of study completed in University One.
2. The actual number of credit hours required to complete the Double Major and Double Honours programs may exceed 120 credit hours and will depend on each specific program, designed in consultation with the departments involved.
3. This number includes a minimum of 12 months paid employment.

### 1.2 Program Offerings ( Honours, Majors, Minors, Focus Areas)

Program	Theme / Focus / Concentration / Option	Honours	Major	Co-op	Minor
Actuarial Mathematics		•			
Biochemistry		•		•	
Biological Sciences		•	•	•	•
Theme Areas	Cell, Molecular and Developmental Biology	•	•	•	
	Ecology and Environmental Biology	•	•	•	
	Environmental and Integrative Physiology	•	•	•	
	Evolution and Biodiversity	•	•	•	
	Integrative Biology	•	•	•	
Biotechnology		•	•	•	
Program Streams	Analytical Biotechnology	•	•	•	
	Environmental Biotechnology	•	•	•	
	Molecular Biotechnology	•	•	•	
Chemistry		•	•	•	•
Focus Areas	Bioanalytical Chemistry	•	•	•	
	Biopharmaceutical Chemistry	•	•	•	
	Biophysical Chemistry	•	•	•	
	Environmental Chemistry	•	•	•	
	Materials Science	•	•	•	
	Organic Chemistry	•	•	•	
	Physical Chemistry	•	•	•	
Quantum / Computational Chemistry	•	•	•		
Computer Science		•	•	•	•
Areas of Specialization	Theoretical Computer Science	•	•	•	
	Networks and Security	•	•	•	
	Artificial Intelligence	•	•	•	
	Human-Computer Interaction	•	•	•	
	Databases	•	•	•	
	Software Engineering	•	•	•	
	Computer Systems	•	•	•	
Computer Science – Mathematics Joint Program		•		•	
Computer Science – Physics and Astronomy Joint Program		•		•	
Computer Science – Statistics Joint Program		•		•	
Genetics		•	•	•	
Mathematics		•	•		•
Applied Mathematics			•		
Options	Computer Science Option		•		
	Economics Option		•		
	Statistics Option		•		
Mathematics – Physics and Astronomy Joint Program		•			
Mathematics – Economics Joint Program		•			



Microbiology		•	•	•	•
Physics and Astronomy		•	•		•
Options	Astronomy (Option A)	•			
	Physics (Option B)	•			
	Medical and Biological (Option C)	•			
Psychology		•	•		•
Statistics		•	•	•	•
Statistics – Actuarial Mathematics Joint Program		•			
Statistics – Mathematics Joint Program		•			
Statistics – Economics Joint Program		•			

## SECTION 2: Admission to the Faculty of Science

### 2.1 Direct Entry Admissions Requirements,

1. Manitoba high school graduation with five full credits at the Grade 12 level in courses designate S, G, or U.

2. A minimum 85% average over the following, with no less than 60% in each course:

- a. English 40S
- b. Pre-Calculus Mathematics 40S (recommended) or Applied Mathematics 40S; AND,
- c. One of Biology 40S, Chemistry 40S, Computer Science 40S, or Physics 40S

### 2.2 Entrance to Science from University 1: Transiting,

To transit from University 1 to the Faculty of Science a student must have completed a minimum of 24 credit hours of courses and achieved a cumulative grade point average of at least 2.00. If a student has satisfied the minimum requirements for entry to Science, they simply perform the **transit function** on AURORA Student to enter the Faculty of Science. There are no fees for transiting and there is no application form required. If you need assistance with transiting to Science from University 1, please contact a Faculty of Science Student Advisor. Students who do not meet the aforementioned minimums may still be eligible to enter the Faculty of Science and can appeal to be considered for admission to Science on the recommendation of the Dean. For further information please contact a Faculty of Science Student Advisor and/or refer to the Faculty of Science applicant information brochure and the University Admissions website: [www.umanitoba.ca/admissions](http://www.umanitoba.ca/admissions).

Students intending to enter a four year Major or Honours program should refer to the program charts in Section 4, Programs and Courses Offered by the Faculty of Science, for courses required for entry into each program. Completion of these courses in University 1 will ensure that a student may complete a four year Major or Honours program in four calendar years.

### 2.3 Transfer Students,

Students who wish to transfer to the Faculty of Science must have completed a minimum of 24 credit hours of post-secondary courses and have achieved a minimum cumulative grade point average of at least 2.00 to be eligible for consideration. Students who do not meet this minimum may appeal to be considered for admission on the recommendation of the Dean. Please see a Science Student Advisor for information. External transfer students with 24 credit hours or more of transfer credit are assessed upon admission to the Faculty of Science.

Students who have completed less than 24 credit hours may be admitted to University 1 or the Division of Extended Education.

Students on academic suspension as a result of work completed at another post-secondary institution will not normally be considered for admission to the University of Manitoba until the suspension has been served.

### Transfer of Credit

*External:* Please refer to the Admissions website at [umanitoba.ca/admissions](http://umanitoba.ca/admissions) or the Admissions section at the front of this *Calendar*. Courses completed at an external institution ten years prior to registration in the Faculty of Science are not considered for transfer credit. Students should contact a Science student advisor regarding departmental transfer credit policies. **All courses acceptable to the Faculty of Science must be transferred.**

### 2.4 Second Degree Students,

Students possessing a first degree from a recognized university program and who have a minimum Cumulative Grade Point Average of 2.00 (or a 2.30 adjusted grade point average – see applicant information bulletin for details on AGPA) on all previous university work are eligible for admission as Second Degree students.

Second degree requirements may be shortened by up to 60 credit hours, and once admitted to a Second Degree Program, students will be expected to conform to all continuation, residency and graduation requirements as described in [Section 3](#).

Specific information on requirements for a Bachelor of Science degree following the completion of a degree in



another faculty or school, or at another university, is available in the general office.

### 2.5 Special Students, After Degree Special Students

Students who have successfully completed a first degree from a recognized university program with a Cumulative Grade Point Average of 2.00 or better are eligible for admission as Special Students.

### 2.6 Auditing Students,

Students who wish to audit courses must have written permission from the instructor of the desired course before they can register. Auditing students must register in person in the Faculty of Science general office. The Faculty of Arts will prohibit auditors from registering in their courses until after the initial access period for registration.

### 2.7 Returning to Science after an Extended Leave,

Students who have been away from Science for more than a year are blocked from using AURORA STUDENT. They must consult with a Science Student Advisor. If the student has not attended another post-secondary institution, they are eligible to return. The advisor will determine academic progress, registration date and time, and discuss degree plans. Students planning a return to studies are strongly urged to contact an Advisor well in advance of the start of registration. Students who have attended elsewhere since their last registration in Science must normally re-apply for admission and be academically competitive for admission on all of their previous academic work. July 1 is the application deadline for Fall term.

Students who have graduated must re-apply (July 1 for Fall Term – Other deadlines may be found at [umanitoba.ca/admissions](http://umanitoba.ca/admissions)) and be academically competitive for admission.

## SECTION 3: Academic Regulations

### 3.1 Regulations Applicable to All Programs,

The provisions of the chapters: "General Academic Regulations and Requirements" and "University Policies" apply to all students. In addition, the Faculty of Science has regulations and requirements published below that apply specifically to its students.

#### Repeating a Course

Science students are subject to the University of Manitoba regulations (see General Academic Regulations and Policy, Repeating a Course) and the Faculty of Science degree regulations regarding eligibility to repeat a course.

Repeating a course will **not** result in the removal of the first attempt and grade in that course from the student's record.

The course will appear on the transcript as many times as it has been repeated. Only the grade from the last attempt will be included in the GPA calculations relating to a student's program of study.

There is a limit on the number of 'F' grades permitted in any degree.

Students who wish to repeat a course must obtain permission to repeat the course from the Faculty of Science prior to registration.

**NOTE:** In most cases, professional Faculties and Schools have specific rules governing the way repeated courses are treated in their admission process. Check the applicant information bulletin of the appropriate Faculty or School, or with the Admissions Office (424 University Centre), or with a Science student advisor for information regarding how different professional programs treat repeated courses in determining admission.

#### Voluntary Withdrawals

The responsibility for initiating withdrawals rests solely with the student. When eligible to do so, Voluntary Withdrawals must be done through Aurora Student, otherwise withdrawals must be authorized first by the Science general office and then through the Registrar's Office. No withdrawals will be permitted after the deadlines posted in the Academic Schedule.

There is no longer a limit on the number of Voluntary Withdrawal hours a student can accumulate (effective September 2006).

In exceptional circumstances, Authorized Withdrawals may be permitted on presentation of appropriate documentation. See the chapter, General Academic Regulations and Policy, section Voluntary Withdrawal from Programs and Courses or consult a Science student advisor for information.

#### Attendance at other Institutions

Students who attend other post-secondary institutions without a Letter of Permission must reapply for admission to the Faculty of Science before the application deadline and be academically competitive for admission. Similarly, students registered in Science here may not be registered at another academic institution at the same time unless they are registered elsewhere on a Letter of Permission. The penalty for unauthorized or undisclosed attendance may be disciplinary withdrawal or academic suspension.

For more information on Letters of Permission, refer to the Registration Information section of this calendar or to the Registrar's Office website at: [umanitoba.ca/registrar](http://umanitoba.ca/registrar).

#### Academic Dishonesty

Academic dishonesty is intentional cheating, fabrication, impersonation, or plagiarism. It is also knowingly helping or



attempting to help others to be dishonest. Academic dishonesty lowers scholastic quality and defrauds others who will eventually depend on their own knowledge and integrity.

Plagiarism or any other form of cheating on examinations, term tests, or assignments is subject to academic penalty as serious as suspension or expulsion from the faculty or university.

Students who are unsure of what constitutes academic dishonesty should refer to the regulations in General Academic Regulations and Policy, Plagiarism and Cheating, and consult with a Science student advisor or a faculty member. Information about academic penalties for academic dishonesty is available on the Faculty of Science website.

### Academic Suspension

Students cannot accumulate more than 36 credit hours of failures (F grades) in courses acceptable for credit in the Faculty of Science on their academic history, regardless of the origin of the grade (i.e. courses taken while in University 1, courses that are transferred from other programs or other institutions will be included) and regardless of whether the course has been repeated. If the 36 credit hour limit of F grades is exceeded, the student will be placed on Academic Suspension for two calendar years. Students returning from suspension must contact a Science Student Advisor prior to registration. A Science Student Advisor will outline the minimum required academic performance to remain in good academic standing in the Faculty of Science.

### Academic Warning

If your last assessment was "Academic Warning" you **must** see a Science Student Advisor prior to registration to receive information about your status.

### Required to Withdraw from Major or Honours

If your last assessment was "Required to Withdraw from the Honours or the Major program," you **must** consult a Science Student Advisor prior to registration. An advisor will review new degree plans, determine eligibility for a desired program, and update any affected university records.

### Students on "Hold"

If a student is on "Hold", they are prevented from any registration transaction (including Voluntary Withdrawals) until you have cleared this status. Contact a Science Student Advisor if you wish to drop a course while on "Hold".

### Term work and Debarment

A student is responsible for the completion of laboratory work, assignments, tests and other class work as prescribed by departments. A student who does not meet term work requirements to the satisfaction of a department will receive a warning to this effect from the department or the general

office. If this warning is ignored, a student may be debarred from the course. Any student debarred from a course receives an automatic grade of "F" in that course.

### Deferred Examinations

Students unable to write a final examination because of illness, disability, or for compassionate reasons, must file an application in the faculty general office for a deferred examination. The application must be filed within seven working days of the last examination in that series. Appropriate documentation must be provided that verifies that the incapacity existed at the time the examination was to be written.

A deferred examination is offered in a manner prescribed by the head of the department concerned. This would normally be written within 30 working days of the last examination in that series. Any other consideration would be determined by the department head.

Students requesting deferred examinations on the grounds that the examinations conflict with vacation or holiday plans shall not be granted deferrals.

A deferred examination is not normally granted to a student who has written the final examination.

Requests for retroactive deferred examinations, deferred examinations that need to be re-deferred, and / or requests where a student is seeking a deferral in a third examination series (i.e. Fall 2008, Winter 2009, Winter 2010 – any course) must be approved by the Faculty of Science Committee on Student Standing. Students must appeal, in writing, to the Committee on Student Standing and provide precise documentation that outlines why a deferral request should be granted in their case.

### Appeals Involving Academic Regulations

The Committee on Student Standing in Science considers appeals from students who request special consideration in respect of rules and regulations governing their programs of study and qualification for graduation.

Appeals should be addressed to: The Secretary, Committee on Student Standing, General Office, Faculty of Science, 239 Machray Hall.

### Appeal for Authorized Withdrawal

Students who have valid and documented reasons for withdrawal, such as medical illness or compassionate circumstances, may be authorized to withdraw without penalty. Requests for authorized withdrawals must be submitted in writing to a Faculty of Science Student Advisor. The Office of Student Advocacy located at 519 University Centre (474-7423, student\_advocacy@umanitoba.ca) is available to provide information and assistance.

### Appeal for other Academic Concessions



Students who believe they have grounds for academic concessions based on their personal circumstances should consult with a Science Student Advisor. The Office of Student Advocacy located at 519 University Centre (474-7423, [student\\_advocacy@umanitoba.ca](mailto:student_advocacy@umanitoba.ca)) is available to provide information and assistance.

### Laboratory Registration

If a course requires registration in both a lecture and a separate appropriate laboratory section, AURORA STUDENT will not permit you to register in that course unless you register for both.

### Laboratory Exemptions

If you think you are eligible for a laboratory exemption, you must check with the department offering the course to obtain formal consent of this. Once received, deliver the written permission to your faculty or school office, as an override may be required on your academic record. You must register for the laboratory exempt section.

It is your responsibility to ensure that you are eligible for a laboratory exemption. If you register for one of these courses and it is subsequently determined that you are not entitled to exemption, you will be required to register for a laboratory section. If no space remains available in the laboratory, you will be required to withdraw from the course.

### Laboratory release

Certain Chemistry and Microbiology courses require that you check out of the laboratory before you withdraw or change lab sections. It is your responsibility to check with the departmental office prior to making any changes to your laboratory registration. Failure to check out of your laboratory may result in your academic records being placed on HOLD.

### 3.2 B.Sc. General Degree Academic Regulations, B.Sc. (General) – Three Year Degree

The three year General program is intended to provide diversified training in Science. The design of the program is such that a student is exposed to several areas of science at an introductory level together with a requirement for more advanced study in at least two Science areas. These requirements will ensure that a student's program of study will have elements of breadth and depth.

This program is not intended for students who desire to practise in some field of specialization in the Sciences. Students with that intent are recommended to pursue the Honours or the four year Major program. However, the three year General program is flexible enough in most departments to allow a student to choose courses that would facilitate transferring to the four year Major program should that become desirable.

### B.Sc. General Academic Regulations

A student must complete 90 credit hours with passing grades ("D" or better) in each course. A student must obtain a minimum grade point average of 2.00 on the 90 credit hours which constitute the degree to qualify for the degree of Bachelor of Science (General).

There is no limit on the number of courses that can be taken within the B.Sc. (General). Students may not exceed 36 credit hours of failures.

#### Introductory Level Science courses (24 credit hours):

Students must select 6 credit hours from each of 3 areas listed below (18 credit hours) in Group A. Additionally, students must select 6 credit hours from any courses listed in Group A and/or Group B.

**NOTE:** No more than 6 credit hours may be selected from any single subject area for use toward the 24 credit hours of introductory course requirements.

#### Group A:

Astronomy: six credit hours chosen from PHYS 1810, PHYS 1820, PHYS 1830

Biology: BIOL 1020 and BIOL 1030

Chemistry: CHEM 1300 and CHEM 1310

Computer Science: COMP 1010 and COMP 1020

Mathematics: six credit hours chosen from MATH 1200, MATH 1300 (or equivalent), MATH 1500, (or equivalent), MATH 1700 (or equivalent), MATH 1690 (6).

Physics: PHYS 1020 or PHYS 1050; and PHYS 1030 or PHYS 1070

Statistics: STAT 1000 and STAT 2000

#### Group B:

BIOL 1410, COMP 1012<sup>2</sup>, [FORS 2000](#), MATH 1210<sup>1</sup>, MBIOL 1010, MBIOL 1220, STAT 2220<sup>3</sup>

Notes:

1. MATH 1210 is intended for Engineering students and may not be held for credit with MATH 1200 or MATH 1300.

2. COMP 1012 is intended for Engineering students and may not be held for credit with COMP 1010.

3. STAT 2220 is intended for Engineering students and may not be held for credit with STAT 1000

**Advanced Level Science Courses (36 credit hours):**

Effective for students entering Science September 2008 or later<sup>2</sup>, to satisfy the advanced level requirements of the 3-year General Degree program, eighteen (18) credit hours at the 2000, 3000, and (or) 4000 level must be chosen from each of **two** of the following Science departments: Biological Sciences, Chemistry, Computer Science, Mathematics, Microbiology, Physics and Astronomy, and (or) Statistics.

Of the 36 credit hours (total) from the advanced areas of study, at least 6 credit hours must be chosen from 3000 or 4000 level courses. Students should note prerequisite requirements for upper level courses when planning their program. Appropriate courses and combinations of courses are detailed in each departmental section. Substitute courses from a department may be taken by obtaining written authorization from the chosen department.

**Biological Sciences Option - Effective Fall Term 2009:**

Because of the newly formed Department of Biological Sciences, effective September 2009, students required to complete 36 credit hours of advanced level credit<sup>2</sup> may elect to choose all 36 credit hours of the advanced level course requirements from the Department of Biological Sciences provided they follow the specified course selections prescribed in the Biological Sciences General Degree chart.

**Other Faculty Courses (12 credit hours):** a minimum of 12 credit hours must be taken from outside the Faculty of Science, of which at least six credit hours must be from the Faculty of Arts. A maximum of 30 credit hours may be taken from outside the Faculty of Science for use in the General Degree program.

**Elective Courses (18 credit hours):** 18 credit hours of the B.Sc. General Degree are open electives.

**Chemistry Option - Effective Fall Term 2010:** The Department of Chemistry has introduced a 3-year Degree program with a Chemistry Focus. Effective September 2010 students required to complete 36 credit hours of advanced level credit may elect to choose a specific set of introductory courses, plus all 36 credit hours of the advanced level course requirements from the Department of Chemistry provided they follow the specified course selections (introductory and advanced levels) prescribed in section 4.5.3 (Three Year B.Sc. – Chemistry Focus Chart).

**NOTES:**

1. Students having difficulty with the interpretation of these regulations or the way in which they are applied, are urged to contact a Science student advisor in the general office. Students are responsible for their own degree progress and completion.

2. Students admitted to the Faculty of Science prior to September 2008 should consult with a Science Student Advisor about degree requirements.

**B.Sc. General Degree Minimum Performance Requirements**

To remain in good academic standing a student must maintain a minimum Degree Grade Point Average (DGPA) of 2.00 at each point of assessment after entrance to the Faculty of Science. Assessment will take place after Fall, Winter, and Summer Terms. If a student's DGPA falls below 2.00 at any point of assessment, the student will receive an **Academic Warning** which will appear on their transcript. The student will remain on Academic Warning until Good Academic Standing is achieved. Students on Academic Warning will be individually advised regarding their status, and of how to improve.

**Students cannot accumulate more than 36 credit hours of failures (F grades) in courses acceptable for credit in the Faculty of Science on their academic history, regardless of the origin of the grade** (i.e. courses taken while in University 1, courses that are transferred from other programs or other institutions will be included) and regardless of whether the course has been repeated.

If the 36 credit hour limit of F grades is exceeded, the student will be placed on **Academic Suspension for two calendar years**. Upon completion of the two-year suspension, the student will be permitted to return to Science and start their degree afresh. Upon returning from a 2-Year Suspension, students may appeal to transfer up to 30 credit hours of previously completed coursework in which a minimum grade of "C" was achieved.

A student placed on academic suspension is not permitted to register in the Faculty of Science during the term of the suspension. Students wishing to return to the Faculty of Science are required to achieve certain academic standards upon their return. For information regarding these standards, consult a Science Student Advisor.

**B.Sc. General Degree Residence Requirements**

There are two ways in which students may fulfill the minimum requirement of credit hours that must be taken at the University of Manitoba: by taking at least 48 credit hours at the University of Manitoba; or by taking at least the final 30 credit hours at the University of Manitoba. The courses used to satisfy the residence requirement must be acceptable for credit in the Faculty of Science. Residency requirements apply to both first and second degree students.

**3.3 B.Sc. Major Degree Academic Regulations, B.Sc. (Major) – Four-Year Degree**

The four year Major programs provide in-depth study and enable graduates to function competently in a career in their chosen subject area.

While this program is not intended for students pursuing graduate studies, most programs allow students to do so with a minimum of difficulty.

The four year Major program may be pursued on a part-time basis, although it must be recognized that under those conditions students would require more than four years to complete degree requirements.



### **B.Sc. (Major): Academic Regulations**

To qualify for the degree Bachelor of Science (Major), a student must complete 120 credit hours or more, with minimum grades of "C" on Major Program Specific courses (as specified by the department), passing grades ("D" or better) on the remaining courses, and a minimum grade point average of 2.00 on the 120 credit hours which contribute to the degree.

Program Specific courses are those identified by the department as being core to the given degree. See the Calendar entry for these departments for clarification.

At least six credit hours **must** be taken from outside the Faculty of Science. As of the 1999-2000 regular session, students admitted to a Major program must complete six credit hours of courses from the Faculty of Arts. Students in the Major degree programs may take a maximum of 36 credit hours from outside the Faculty of Science.

### **B.Sc. (Major): Entrance Requirements**

To enter a four year Major program, a student must normally have achieved a minimum grade of "C+" in at least one introductory course designated by the department(s). In addition, to enter a four year Major program a student shall normally have completed at least 30 credit hours, although a student may enter on the recommendation of the department with only 24 credit hours completed.

Any student who, prior to being admitted to a four year Major program that has completed more than 30 credit hours will be allowed to apply those excess credit hours which meet the specifications of the program to the four year Major program.

Students must attain a Cumulative Grade Point Average of at least 2.00 (DGPA of 2.00 for Second Degree students and Start Afresh students) regardless of the point of entry, and must meet continuation requirements as outlined below.

### **B.Sc. (Major): Continuation Requirements**

To continue in the program, a student must maintain a Cumulative Grade Point Average of 2.00 (DGPA of 2.00 for Second Degree students and Start Afresh students) at each point of assessment. Students who do not meet this minimum will be required to withdraw from the Major program.

There is no minimum term course load requirement for the Major program.

**Failed courses:** Any student that exceeds 18 credit hours of failing grades after entering a Major program will be required to withdraw from that program.

A student will be required to repeat those failed courses specified as required courses for the program; however, with

the approval of the department the student may be allowed to substitute a new course for any elective course failed.

**Program Approval:** The department must approve a student's Major program prior to registration for courses in each session. Students must also obtain departmental approval for any and all revisions to their program.

Major students reverting to the General program must fulfil all academic requirements of that degree.

### **B.Sc. (Major): Residence Requirement**

To satisfy the Faculty of Science residency requirements, a student must successfully complete at least 60 credit hours at the University of Manitoba. The courses used to satisfy the requirement must be acceptable for credit in the Faculty of Science. Residency requirements apply to both first and second degree students.

### **B.Sc. Double Major Programs**

Students may wish to pursue a Double-Major program in the Faculty of Science. Consultation with, in addition to specific course selection and approval from, the departments involved must occur prior to the commencement of any Double-Major program. Students must also consult with a Faculty of Science Student Advisor prior to the start of any Double-Major program.

### **3.4 B.Sc. (Major) Cooperative Option Academic Regulations,**

The Major programs that offer a Cooperative Option are: Biochemistry, Biological Sciences, Biotechnology, Chemistry, Computer Science, Genetics, and Microbiology.

A cooperative education program is an arrangement whereby a student spends alternating periods in university and employment. There are several advantages to cooperative education programs for students. One benefit is that students are able to acquire both theoretical knowledge and practical experience. This experience assists them in selecting areas of specialization for their senior courses. During an employment period students can also typically earn enough to defray the cost of their university education. The contacts developed with potential employers are also valuable to graduating students.

All regulations governing regular Major programs apply to the Cooperative Option. In addition, the following variations apply:

#### **Entrance**

To enter the Cooperative Option a student must be eligible to enter the Major program offered by the department.

The normal point of entry to a Major Cooperative Option is following the completion of second year in the Faculty of Science.



Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option in those departments where the demand for places exceeds the number of places available. In such situations the department reserves the right to determine and select the best qualified applicants.

### Structure and Sequencing

The Cooperative Option consists of both academic terms and employment terms.

Each academic term can be either four months in duration or eight months in duration, as designated by the Major department.

Each employment term can be either four months in duration or eight months in duration, as designated by the Major department.

Each academic term and each employment term will commence in January, May or September.

The sequence of academic terms and employment terms is variable to suit the needs of each department, and is designated by each department.

Students are expected to follow the academic/employment term sequence defined by their department from admission through to graduation.

### Employment Term Requirements

All Cooperative Options will include at least 12 months spent in employment terms with a department-approved employer. Normally, each employment term will be completed with one employer.

Students are required to register in the appropriate employment term course and pay the fee prior to starting their employment term. Cooperative Option students are required to submit three written employment reports on their employment term activities. These reports are due at times designated by the Major department. Each Major department will provide students with instructions regarding the content and format requirements of the employment reports.

Indications of unsatisfactory performance by a student on an employment term will be thoroughly investigated by the Major department. As a result of the investigation, if benefits from further professional training are questionable, the student may be required to withdraw from the Cooperative Option. The student would then be eligible to enter the regular four year Major program or the General program.

While on an employment term, a Cooperative Option student is not permitted to take more than six hours of academic credit, and may not take more than one course at a time.

### Academic Term Requirements

Undergraduate Calendar

Coursework requirements of the Cooperative Option are equivalent to the coursework requirements of the four year Major program with the exception of the Biological Sciences programs.

Cooperative Option students are expected (but are not required) to maintain a full-time course load while registered for an academic term. The "normal full load" per four-month term is three half courses (9 credit hours).

To continue in a four year Major Cooperative Option a student must attain a minimum Degree Grade Point Average of 2.00 at each point of assessment. Departments may designate courses within the four year Major Cooperative Option in which students are required to attain a grade above 'C'. Continuation in a four year Major Cooperative Option is also contingent upon satisfactory performance in employment terms.

A student who does not meet the academic requirements for continuation in a four year Major Cooperative Option will be required to withdraw from it.

A student who receives failing grades in more than 18 credit hours following admission to the four year Major program will be required to withdraw from the Major program.

Four year Major Cooperative Option students who are required to withdraw, or voluntarily revert to an alternative degree program must fulfil all academic requirements of that degree.

### 3.5 Honours Academic Regulations, B.Sc. (Honours) and B.C.Sc. (Honours) – Four Year Degrees

The Honours programs in the Faculty of Science are the most heavily concentrated programs offered. These programs lead most directly to graduate study and are in most cases prescribed extensively by the departments. A student is required to pursue this degree full-time and may be required to achieve higher grade standards than in other degree programs. The programs are regarded as professional training.

Students graduating from the Honours program in Computer Science receive the degree designation Bachelor of Computer Science (Honours), also noted as B.C.Sc. (Honours).

A student electing an Honours program will normally begin Honours work in second year and must meet the entrance requirements set out below. Honours work will consist of three years of study in prescribed courses beyond the first year and will lead to the B.Sc. (Honours) or the B.C.Sc. (Honours).

Students must complete the university written English and Mathematics requirements as described in the chapter, [General Academic Regulations and Policy](#), of this *Calendar*.



As of the 1999-2000 Regular Session, students admitted to Honours programs must complete six credit hours from the Faculty of Arts. Because many Honours programs in the Faculty of Science do not have room for electives in Years 2, 3 and 4, these six credit hours, including the three credit hours of written English, should be completed in Year 1.

### Honours Entrance Requirements

To enter an Honours degree program, a student must have completed at least 24 credit hours, have a minimum DGPA of 3.00, and a grade of "B" or better in at least one introductory course designated by the department(s).

Another way to gain entry to the many Faculty of Science Honours programs is through the **Second Year Entry Route**. If a student finds himself/herself ineligible to enter a desired Honours program following the completion of 24 or more credit hours, eligibility to enter Honours via the second year entry route can be established by taking a minimum of 18 credit hours over consecutive Fall and Winter Terms (formerly called a Regular Session) with a minimum of 9 credit hours in each term. The 18 credit hours chosen must be applicable to the program the student wishes to enter, and the student must achieve at least a "B" average on those 18 credit hours. If a student chooses to attempt more than 18 credit hours over the consecutive Fall and Winter terms, the best applicable 18 credit hours will be used to calculate whether or not the "B" average has been achieved for the purpose of assessing eligibility for entrance to the Honours program of choice. Note: Students wishing to enter an Honours program using the Second Year Entry Route must also have an overall DGPA of at least 3.00.

**Program Approval:** The department must approve a student's Honours program prior to registration for each session. Students must also obtain departmental approval for any and all revisions to their program.

### Honours Continuation Requirements

A minimum Degree Grade Point Average of 3.00 is required at each point of assessment. Certain departments may have more rigorous continuation requirements. Check the specific departmental section for further information.

Students must complete a minimum of 9 credit hours in each Fall and Winter Term (or equivalent for students in the Co-operative option) to remain in Good Academic standing in the Honours program. Students failing to do so will be required to withdraw from the Honours program and may be eligible to pursue the B. Sc. Major program or the B. Sc. General degree program.

Students who do not meet the minimum requirement will be required to withdraw from the Honours program.

Students who accumulate more than 15 credit hours of failed courses after entering the Honours degree program (regardless of the origin of the grade or if the course has been repeated) will be required to withdraw from the program. Students required to withdraw from the Honours

program may be eligible to pursue the B. Sc. Major program or the B. Sc. General degree program.

### Honours Graduation Requirements

To qualify for the degree, Bachelor of Science (Honours), a student must complete a minimum of 120 credit hours or more with a minimum grade of C on all courses contributing to the 120 credit hours that satisfy the program requirements. Additionally, students must have a minimum degree grade point average of 3.00.

### Honours Residence Requirement

A student must successfully complete a minimum of 60 credit hours at the University of Manitoba. The courses used to satisfy the requirement must be acceptable for credit in the Faculty of Science. Residency requirements apply to both first and second degree students.

### Withdrawal from Honours

Honours students reverting to an alternate degree program must fulfil all academic requirements of that degree.

### Double Honours Programs

Double Honours programs may be available as specified under departmental headings. Other programs may be arranged in consultation with the departments concerned.

### 3.6 Honours Cooperative Option Academic Regulations,

The Honours programs offering a Cooperative Option are: Biochemistry, Biological Sciences, Biotechnology, Chemistry, Computer Science, Genetics, Microbiology, Joint Computer Science - Mathematics, Joint Computer Science – Physics and Astronomy, and the Joint Computer Science – Statistics program (Coming Soon!).

A cooperative education program is an arrangement whereby a student spends alternating periods in university and employment. There are several advantages to cooperative education programs for students. One benefit is that students are able to acquire both theoretical knowledge and practical experience. This experience assists them in selecting areas of specialization for their senior courses. During an employment period students can also typically earn enough to defray the cost of their university education. The contacts developed with potential employers are also valuable to graduating students. The Honours Cooperative Option therefore offers valuable work experience and simultaneously ensures an academic program of Honours calibre.

All regulations governing regular Honours programs apply to the Cooperative Option. In addition, the following variations apply:

### Entrance



To enter the Cooperative Option a student must be eligible to enter the Honours program offered by the department.

The normal point of entry to an Honours Cooperative Option is following the completion of second year in the Faculty of Science. Following that point of entry all requirements of the Cooperative Option must normally be completed in no more than four years (48 months).

Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option in those departments where the demand for placements exceeds the number of places available. In such situations the department reserves the right to determine and select the best qualified applicants.

### Structure and Sequencing

The Cooperative Option consists of both academic terms and employment terms.

Each academic term can be either four months in duration or eight months in duration, as designated by the Honours department.

Each employment term can be either four months in duration or eight months in duration, as designated by the Honours department.

Each academic term and each employment term will commence in January, May or September.

The sequence of academic terms and employment terms is variable to suit the needs of each department, and is designated by each department.

Students are expected to follow the academic/employment term sequence defined by their department from admission through to graduation.

### Employment Term Requirements

All Cooperative Options will include at least 12 months spent in employment terms with a department-approved employer. Normally, each employment term will be completed with one employer.

Cooperative Option students are required to submit at least three written employment reports on their employment term activities. These reports are due at times designated by the Honours department. Each Honours department will provide students with instructions regarding the content and format requirements of the employment reports.

Indications of unsatisfactory performance by a student on an employment term will be thoroughly investigated by the Honours department. As a result of the investigation, if benefits from further professional training are questionable, the student may be required to withdraw from the Cooperative Option. The student would then be eligible to

enter the regular Honours program, the four year Major program or the General program.

While on an employment term, a Cooperative Option student is not permitted to take more than six hours of academic credit, and may not take more than one course at a time.

### Academic Term Requirements

Coursework requirements of the Cooperative Option are equivalent to the coursework requirements of the Honours program with the exception of the Biochemistry, Genetics and Microbiology programs.

Cooperative Option students must maintain a full-time course load while registered for an academic term. The "normal full load" per four-month term is three half courses (9 credit hours).

To continue in an Honours Cooperative Option a student must attain a Degree Grade Point Average of 3.00 or higher at each point of assessment. A student's performance will be evaluated following each academic term. In addition, the student must meet all individual course prerequisites for further study and departmental continuation and graduation requirements.

Continuation in an Honours Cooperative Option is contingent upon satisfactory performance on Employment Terms.

Honours Cooperative Option students who are required to withdraw or voluntarily revert to an alternative degree program must fulfil all academic requirements of that degree.

### 3.7 Minors: Academic Regulations for Science Students,

Students in B.Sc. Major and Honours programs may, if they wish, declare and complete a Minor from any department or interdisciplinary program at the University of Manitoba which offers a listed Minor. In the Faculty of Science Minors are listed in the program charts for each department and interdisciplinary program. Other available Minor requirements can be found within the appropriate sections of the departmental/school/faculty offerings. Completion of a Minor in a B.Sc. Major or Honours program is entirely optional. Students may not, however, declare both their Major and Minor from the same department/interdisciplinary program. It should be noted that for Honours students any consideration of completing a Minor should be made early on, due to restricted opportunities in later years of their programs. Completion of a Minor may require that a student take more than the minimum number of credit hours required for graduation. If they wish, students may choose to complete and declare multiple Minors in the four year Major and Honours degree programs.

The Minor is not available to students in the B.Sc. General Degree program.



A Minor will normally consist of a minimum of 18 credit hours specified by the department(s) offering the Minor. Courses required in a student's specific Honours or Major degree program are acceptable for use in a chosen Minor, subject to the Faculty of Science regulation stating that students may not declare both their Major and Minor from the same department or interdisciplinary program.

Minors not offered by the Faculty of Science can be selected from the following list. For further information about courses required for the completion of a specific Minor, please refer to the section of the calendar that relates to the chosen area.

Animal Systems, Entomology, Food Science, Plant Biotechnology, Soil Science, Art History, Anthropology, Asian Studies, Canadian Studies, Catholic Studies, Central and East European Studies, Classics, Greek, Latin, Economics, English, Film Studies, Theatre, French, Spanish, Italian, German, Russian, Ukrainian, Polish, History, Icelandic, Labour Studies, Linguistics, Medieval Studies, Native Studies, Native Languages, Near Eastern and Judaic Studies, Philosophy, Political Studies, Psychology, Religion, Sociology, Ukrainian Canadian Heritage Studies, Women's and Gender Studies, Geography, Geological Sciences, Physical Geography, Environmental Science, Environmental Studies, Human Nutrition and Metabolism, Family Social Sciences, Management\*, and Music.

**\*Faculty of Management/Asper School of Business:** For entry to the Minor, the prerequisite is a grade of "C" or better in the first 6 hours of Business courses. The Management Minor will consist of any 18 hours of credit in courses offered by the Asper School of Business. Enrolment in this program will be limited to 20 students annually. Students planning to enrol in this minor must consult a Faculty of Science student advisor.

### 3.8 Dean's Honour List, Degree with Distinction, First Class Honours, Dean's Honour List (all programs)

Students enrolled in 12 credit hours or more who achieve a Term Grade Point Average of 3.80 or higher will be placed on the Dean's Honour List. The Dean's Honour List will be calculated after each term.

### Degree with Distinction (4-Year Major Degree and 3-Year General Degree)

To obtain a Degree with Distinction a student must achieve a final minimum Degree Grade Point Average of 3.80. The term "Degree with Distinction" will appear on the student's parchment and the student's transcript of marks.

### First Class Honours (Honours Degree Only)

To graduate with First Class Honours the student must achieve a final minimum Degree Grade Point Average of 3.80. The term "First Class Honours" will appear on the student's parchment and on the student's transcript of marks.

### 3.9 Faculty of Science Academic Awards,

Refer to the Faculty of Science Website for information regarding awards available to Faculty of Science Students:

<http://umanitoba.ca/faculties/science/about/awards.html>

To be eligible for any award granted exclusively on the basis of academic performance, a student must be enrolled in 100% of a full program as defined by the department.

### 3.10 Academic Advising,

#### Contact Information

Science General Office: 239 Machray Hall  
Telephone: (204) 474 8256  
Toll-Free: 1 800 432 1960, extension 8256  
E-mail: [science\\_advisor@umanitoba.ca](mailto:science_advisor@umanitoba.ca)  
Website: [www.umanitoba.ca/science](http://www.umanitoba.ca/science)  
Science Advisor Availability: [availability calendar](#)

#### Student Responsibility

You must ensure that you are selecting the correct courses that will enable you to satisfy your degree requirements. Specific degree requirements are listed in the program charts found in the departmental/program sections of this chapter. Final completion of specific degree requirements is the student's responsibility. Student Advisors are available to answer any questions regarding a student's academic progress.

AURORA STUDENT will not check degree requirements. You are responsible for knowing the requirements of your degree. Consult with a Science Student Advisor for advice and assistance if you are uncertain about your degree requirements.

**AURORA Student will not prevent a student from registering in two (or more) courses that are designated as not to be held for credit with one another.** It is the student's responsibility to ensure that they are not registered for courses that are ineligible to be held for credit with one another. Read the carefully. If you are unsure about a course you have selected, check with a Science Advisor prior to the revision deadline. No academic concessions will be granted in this regard.

You cannot add or change a course classification through AURORA STUDENT. Therefore, if you are an undergraduate student and wish to take a course as a Special Student in your degree, as an Auditor, or as a Challenge for Credit, you must add this course in person in the Science General Office within the normal deadlines for such activity.

#### General Degree Program

Students in the General program are not required to contact a Science Student Advisor before registration; however, they



are strongly advised to do so. A Science Student Advisor can answer any questions about degree progress and entry to professional faculties that may affect registration.

Students reverting from a Major or Honours program to the General program must consult a Science Student Advisor prior to registration, so that their university records may be changed.

Science Student Advisors may check your degree progress periodically. These checks are completed after registration. **Reminder: It is the student's responsibility to know and satisfy all degree requirements.**

### Honours, Major, and Cooperative Options

Honours students are required to register in a minimum of 9 credit hours during each Fall and Winter Term. Prior to declaring graduation, Honours, Major, and Co-op students are encouraged to have their programs checked by Student Advisors on a regular basis. However, at the minimum, students must have their program checked and approved by a Science Advisor prior to the start of the term they enter their program and again prior to the term they plan on completing their degree.

**Students entering or changing a program must see a Science Student Advisor so that eligibility can be checked and university records updated.**

## SECTION 4: Programs and Courses offered by the Faculty of Science

### Course Selection

The courses required to complete the specific Honours, Major, General and Minor programs in Science are listed in the program charts found below.

Not all courses included in the course description sections below are currently offered. The course schedule for the current academic year is available through [AURORA Student](#). Students should note that space in Honours and Major specific courses may be reserved for students in those programs.

All Honours and Major Degree Programs (4-year degrees) offered by the Faculty of Science satisfy the University "M" (Mathematics) requirement.

Students registered in the 3-Year General Degree programs are responsible for ensuring that they successfully complete a course that will satisfy the University's "M" (Mathematics) requirement.

Students in all programs are responsible for ensuring that they successfully complete a course that will satisfy the University's "W" (Written English) requirement.

For a complete listing of courses that satisfy the University's "W" and "M" requirements refer to appendix A of the General Academic Regulations and Requirements section of this Calendar.

In the Faculty of Science, unless otherwise noted, a minimum grade of "C" is required in any course listed as a prerequisite.

**NOTE:** Course prerequisites may be waived with written consent of the department

### 4.1 Actuarial Mathematics Program

**Program Director:** Jeffrey Pai

**Campus Address/General Office:** 640 Drake Centre

**Telephone:** 204 474 6412

**Email Address:** [jpai@ms.umanitoba.ca](mailto:jpai@ms.umanitoba.ca)

**Website:** [www.umanitoba.ca/actuarial](http://www.umanitoba.ca/actuarial)

This is an interdisciplinary program leading to a Bachelor of Science (Honours) degree in Actuarial Mathematics offered in collaboration with the Warren Centre for Actuarial Studies and Research of the I.H. Asper School of Business. The program covers mathematical, statistical, financial and economic concepts required to develop skills in the modelling and management of financial risk and contingent events. In the Faculty of Science the program has a greater emphasis on the mathematical and statistical courses than does the Actuarial Mathematics program offered by the I.H Asper School of Business.

The Warren Centre, with the department of Statistics, offers a joint Honours program (see Section 4.13.3).

**To enter** the program, a student must have completed a minimum of 24 credit hours with a minimum GPA of 3.00, and also obtained a minimum grade of "B" in one of the following courses: a three (3) credit hour Written English (W) course, MATH 1300, MATH 1500, MATH 1700, STAT 1000, or both of ECON 1010 and ECON 1020. All of these courses are program requirements and students are strongly urged to take them in the first year.

**To continue** in the Actuarial Mathematics Honours program, students must maintain a minimum DGPA of 3.00, and complete a minimum of 9 credit hours during each Fall and Winter Term.

**To graduate** with the B. Sc. Honours degree, a student must achieve a minimum DGPA of 3.00, a minimum grade of "C+" in each of the Honours Program Specific courses (see below), and a minimum grade of "C" on all remaining courses that contribute to the 120 credit hours of the degree.

### Honours Program Specific Courses



Students must achieve a minimum grade of "C+" in each of the following for both prerequisite purposes and graduation requirements:

ACT 2020, ACT 2120, ACT 2210, ACT 3130, ACT 3230, ACT 3340, ACT 3530, ACT 4060, ACT 4140, ACT 4340

In order to receive course credit for, and examination exemptions from, future Society of Actuaries (SoA) and VEE courses, students must obtain a minimum grade of "B" in the following courses: ECON 1010, ECON 1020, ACC 1100, FIN 2200, STAT 3470, and STAT 3490. Contact the Warren Centre for Actuarial Studies and Research for further information.

#### 4.1.2 Actuarial Mathematics Program Chart

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS ACTUARIAL 120 CREDIT HOURS</b>			
ECON 1010 <sup>5</sup> , ECON 1020 <sup>5</sup>	ACT 2020, ACT 2120	ACT 2210, ACT 3130, ACT 3230, ACT 3340	ACT 4060, ACT 4140, ACT 4340
MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup> , MATH 1300 <sup>1</sup>	STAT 2400, STAT 3400	STAT 3050, STAT 3800	STAT 3470 <sup>5</sup> , STAT 3490 <sup>3,5</sup>
STAT 1000, STAT 2000	ACC 1100 <sup>2,5</sup> , FIN 2200 <sup>2,5</sup> , GMGT 2010		MSCI 2150 <sup>5</sup>
3 credit hour "W" requirement	MATH 2720 <sup>1</sup> , MATH 2730 <sup>1</sup>		
	MATH 2300 <sup>4</sup>		
6 credit hours of electives <sup>2</sup>		12 credit hours of approved electives <sup>6</sup>	12 credit hours of approved electives <sup>6</sup>
30 Hours	30 Hours	30 Hours	30 Hours
<b>JOINT STATISTICS - ACTUARIAL MATHEMATICS HONOURS:</b> See Section 4.13.3			
<b>NOTES:</b>			
<sup>1</sup> MATH 1510 or MATH 1520 may be taken instead of MATH 1500; MATH 1310 may be taken instead of MATH 1300; MATH 1710 may be taken instead of MATH 1700. MATH 1690 may be taken in place of both MATH 1500 and MATH 1700; MATH 2750 may be taken in place of both MATH 2720 and MATH 2730.			
<sup>2</sup> Students are strongly urged to complete ACC 1100 in Year 1 when possible. FIN 2200 may be taken in Year 2,3 or 4; however, it is strongly recommended that it be completed in Year 2. Note that ACC 1100 is a prerequisite for FIN 2200.			
<sup>3</sup> STAT 3490 may be taken in Year 3 or 4.			
<sup>4</sup> MATH 2300 may be taken in Year 2, 3 or 4.			
<sup>5</sup> In order to receive course credit and examination exemptions from future Society of Actuaries (SoA) and VEE courses, students must obtain a minimum grade of "B" in these courses. Contact the Warren Centre for Actuarial Studies and Research for further information.			
<sup>6</sup> Recommended Electives			
The electives in Year 3 and Year 4 are to be chosen from Actuarial Mathematics, approved Business courses, Computer Science, Economics, Mathematics (3000 or 4000 level) and Statistics (4000 level courses). Other electives may be selected through consultation with the program director.			
Year 3: FIN 3410, STAT 3480			
Year 4: FIN 3270, STAT 4100, STAT 4200, STAT 4520, STAT 4530, STAT 4630.			

#### 4.2 Biochemistry

**Campus Address/General Office:** 418 Buller Building / 360 Parker Building

**Telephone:** 204 474 9372 / 204 474 9321

**Email Address:** [dcourt@cc.umanitoba.ca](mailto:dcourt@cc.umanitoba.ca) and [Chemistry\\_Dept@umanitoba.ca](mailto:Chemistry_Dept@umanitoba.ca)

**Website:**

<http://umanitoba.ca/faculties/science/departments/microbiology/> OR <http://www.umanitoba.ca/chemistry>

**Academic Staff:** Deborah Court, Head, Department of Microbiology; Peter Budzelaar, Head, Department of Chemistry

The program coordinators must approve a student's Honours or Major program each session. Students must also obtain approval for any and all revisions to their program.

#### Biochemistry Honours Degree Requirements

**To enter** the joint Honours program in Biochemistry, a student must have completed at least 24 credit hours with a minimum GPA of 3.00 and also obtained a minimum grade of "B" in CHEM 1310 and a minimum grade of "C+" in BIOL 1020. BIOL 1030, PHYS 1020 (or PHYS 1050), PHYS 1030 (or PHYS 1070), MATH 1500 and MATH 1700 are required courses in the program and students are strongly encouraged to complete them in first year.

**To continue** in the Biochemistry Joint Honours program, students must maintain a minimum GPA of 3.00, and complete a minimum of 9 credit hours during each Fall and Winter Term.

**To graduate** with the Biochemistry Joint Honours degree, a student must achieve a minimum GPA of 3.00 and obtain a



minimum grade of "C" on the courses that make up the 120 credit hours of the degree.

#### Chemistry and Microbiology Option Courses for Biochemistry Honours Students:

CHEM: 2290, 3400 3360, 3370, 3390, 3490, 3580, 4370, 4570, 4580, 4590, 4600, 4640, 4650, 4670, 4680, 4690, 4710 (6)

MBIO: 3000, 3010, 3030, 3280, 3430, 3470, 4010, 4020, 4410, 4440, 4480, 4520, 4530, 4570, 4580, 4600, 4610, 4670 (or 4672)

Option courses no longer offered that may be used if taken prior to their deletion: CHEM 3380, MBIO 2280, MBIO 3440, MBIO 3480, MBIO 4320, MBIO 4470, and MBIO 4510. NOTE: Several of these courses may not be held with current course offerings found on the above option lists. Please refer to the calendar descriptions for more information about specific course restrictions.

Other options may be considered and approved by the program advisor.

#### Biochemistry Honours Cooperative Option

Students interested in alternating academic terms and terms of paid employment as part of their Honours Biochemistry program may enter the Cooperative Option in April of their second year. The five year program provides students with minimum 12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and University units.

The course and grade requirements for entry and continuation in the Cooperative Option are the same as that for regular Honours program. Each academic term in the third and subsequent years must comprise a minimum of nine (9) credit hours. Students are required to complete the first and second year requirements of the program and MBIO 3410 before they begin their first employment term. Students should refer to the general faculty regulations for B. Sc. (Honours) Cooperative Options in Section 3.6.

**To graduate** with the B. Sc. Honours (Cooperative Option) degree, a student must achieve a minimum GPA of 3.00 and a minimum grade of "C" on all courses that contribute to the 120 credit hours of the degree.

In addition to the program specific courses, in years 3 and 4 students will select 21 credit hours from the list of optional Microbiology and Chemistry courses found below. Additionally, students will select 12 credit hours of Science electives (see note 5).

#### Chemistry and Microbiology Option Courses for Biochemistry Honours Students:

CHEM: 2290, 3400 3360, 3370, 3390, 3490, 3580, 4370, 4570, 4580, 4590, 4600, 4640, 4650, 4670, 4680, 4690, 4710 (6)

MBIO: 3000, 3010, 3030, 3280, 3430, 3470, 4010, 4020, 4410, 4440, 4480, 4520, 4530, 4570, 4580, 4600, 4610, 4670 (or 4672)

Option courses no longer offered that may be used if taken prior to their deletion: CHEM 3380, MBIO 2280, MBIO 3440, MBIO 3480, MBIO 4320, MBIO 4470, and MBIO 4510. NOTE: Several of these courses may not be held with current course offerings found on the above option lists. Please refer to the calendar descriptions for more information about specific course restrictions.

Other options may be considered and approved by the program advisor.

Students must check with the Co-op office for the April application deadline information. Students will be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each employment term.

#### Biochemistry Four Year Major Degree Requirements

**To enter** the joint four year Major program, a student must have completed a minimum of 24 credit hours with a minimum GPA of 2.00, and also obtained a minimum grade of "C+" in CHEM 1310, and a minimum grade of "C" in BIOL 1020. BIOL 1030, PHYS 1020 (or PHYS 1050), PHYS 1030 (or PHYS 1070), MATH 1500, and MATH 1700 are required courses in the program and students are strongly encouraged to complete these courses in first year.

**To continue** in the Bachelor of Science Major degree program, students must maintain a minimum GPA of 2.00.

**To graduate** with the Bachelor of Science Major in Biochemistry, a student must complete 120 credit hours or more, with minimum grades of "C" on all Major Program Specific courses (see below), passing grades ("D" or better) on the remaining courses, and a minimum grade point average of 2.00 on the 120 credit hours that contribute to the degree.

#### Major Program Specific Courses:



CHEM: 2210, 2220, 2280, 2360 (MBIO 2360), 2370 (MBIO 2370), 2400 (2380), 2470, 3570, 4630 and whichever one of 4620, 4360, 4370 is selected

MBIO: 1010, 2020, 3410, and whichever one of 3450, 3460 or 4540 is selected.

Students in this program should note the following:

Students must satisfy any course prerequisites and corequisites for courses selected. Care should be taken to select courses in their proper sequence, e.g. CHEM 2370 (MBIO 2370) and MBIO 2020 should be taken in Year 2 as they are prerequi-site to a number of subsequent required or optional courses.

Normally 4000 level courses are available only to students in their fourth year. MBIO 4530 and MBIO 4570 are not available to Major students.

Students are encouraged to elect other courses pertinent to the study of bi-chemistry although this is not required for completion of the degree. The departments of Microbiology and Chemistry will be glad to suggest such supplementary courses upon request.

Students who may wish to transfer to the Honours program in Biochemistry following Year 2 should be sure to complete all courses recommended in Year 2 (see chart below).

#### Biochemistry Major Cooperative Option

Students interested in alternating academic terms and terms of paid employment as part of their program may enter the Biochemistry Major Cooperative Option in April of their second year. The five year program provides students with a minimum 12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and University units.

The course and grade requirements for **entry and continuation** in the Cooperative Option are the same as those required for the regular Major program. Students are

encouraged, but not required, to take 15 credit hours in each academic term in the third and subsequent years. Students are required to complete the first and second year requirements of the program and MBIO 3410 before they begin their first employment term. Students should refer to the general faculty regulations for B. Sc. (Major) Cooperative Options in Section 3.4.

**To graduate with** the degree Bachelor of Science Major (Cooperative Option), a student must complete the equivalent of 120 credit hours or more, with minimum grades of "C" on Major Program Specific courses (see below), passing grades ("D" or better) on the remaining courses, and a minimum grade point average of 2.00 on the 120 credit hours that contribute to the degree.

#### Major Program Specific Courses

CHEM 2210, 2220, 2280, 2360 (MBIO 2360), 2370 (MBIO 2370), 2400 (2380), 2470, 3570, 4630 and whichever of 4620, 4360, 4370 is selected

MBIO 1010, 2020, 3410, and whichever one of 3450, 3460 or 4540 selected.

Students must check with the Co-op office for the April application deadline information. Students will be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each employment term.

#### 4.2.2 Biochemistry Programs

4.2.2 Biochemistry Programs (offered Jointly by the Departments of Chemistry and Microbiology)			
YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS 120 CREDIT HOURS</b>			
CHEM 1300, CHEM 1310 BIOL 1020, BIOL 1030 PHYS 1050 (or PHYS 1020), PHYS 1070 (or PHYS 1030) MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2360, CHEM 2370, CHEM 2400, CHEM 2470 MBIO 1010, MBIO 2020	CHEM 3570 MBIO 3410, MBIO 3450, MBIO 3460	CHEM 4360, CHEM 4620, CHEM 4630, CHEM 4700 MBIO 4540
In Year 1 or Year 2 the following must be completed: 6 credit hours from the Faculty of Arts including the University		21 credit hours selected from the list of Microbiology and Chemistry optional courses (listed above).	



Written English "W" requirement <sup>2</sup>		12 credit hours selected from the Faculty of Science <sup>5</sup>	
3 credit hours chosen from COMP, MATH, or STAT <sup>5</sup>			
30 Hours	30 Hours	30 Hours	30 Hours
<b>JOINT HONOURS COOPERATIVE OPTION<sup>3</sup> 120 CREDIT HOURS</b>			
CHEM 1300, CHEM 1310	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2360, CHEM 2370, CHEM 2400, CHEM 2470	CHEM 3570	CHEM 4360, CHEM 4620, CHEM 4630
BIOL 1020, BIOL 1030		MBIO 3410, MBIO 3450, MBIO 3460	
PHYS 1050 (or PHYS 1020), PHYS 1070 (or PHYS 1030)	MBIO 1010, MBIO 2020		MBIO 4540
MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>			
In Year 1 or Year 2 the following must be completed:		24 credit hours selected from the list of Microbiology and Chemistry Optional courses listed above.	
6 credit hours from the Faculty of Arts including the University Written English "W" requirement <sup>2</sup>		12 credit hours selected from the Faculty of Science <sup>5</sup>	
3 credit hours chosen from COMP, MATH, or STAT <sup>5</sup>		Work Terms:	
		MBIO 3980, MBIO 3990, MBIO 4980 and/or MBIO 4990	
30 Hours	30 Hours	30 Hours	30 Hours
<b>JOINT FOUR YEAR MAJOR (Including Cooperative Option)<sup>3,4</sup> 120 CREDIT HOURS</b>			
CHEM 1300, CHEM 1310	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2360, CHEM 2370, CHEM 2400, CHEM 2470	CHEM 3570	CHEM 4630
BIOL 1020, BIOL 1030		MBIO 3410	One of: CHEM 4620, CHEM 4360, CHEM 4370
PHYS 1050 (or 1020), PHYS 1070 (or PHYS 1030)	MBIO 1010, MBIO 2020	One of: MBIO 3450, MBIO 3460, MBIO 4540	
MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>			
In Year 1 or Year 2 the following must be completed:		24 credit hours of Microbiology and Chemistry (minimum 6 credit hours from each dept.). Of these 24 credit hours, at least 12 hours must be 4000 level courses.	
6 credit hours from the Faculty of Arts including the University Written English "W" requirement <sup>2</sup>		21 credit hours of approved electives <sup>5</sup>	
3 credit hours chosen from COMP, MATH, or STAT <sup>5</sup>		Work Terms (if Co-op Selected):	
		MBIO 3980, MBIO 3990, MBIO 4980 and / or MBIO 4990	
<b>NOTES:</b>			
1 MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700; MATH 1690 may be taken in place of MATH 1500 and MATH 1700.			
2 As there are no open electives in Year 2 of the program, students should complete the university written English requirement in Year 1. If not completed in Year 1, a "W" course must be completed prior to Year 3 in addition to the required Year 2 courses.			
3 IMPORTANT: Students in the cooperative programs must ensure that they are able to satisfy the prerequisites for all 3000 and 4000 level courses they plan to take.			
4 The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.			
5 MATH 1010, MATH 1020, MATH 1190, COMP 1260, COMP 1270 may not be chosen to satisfy this requirement (Letters in brackets indicate minimum prerequisite standing for further study.)			

**4.3.1 Biological Sciences**

**Head:** Judy Anderson

**Campus Address/General Office:** 212 Biological Sciences  
Building

**Telephone:** 204 474 9245

**Email Address:** [janders@ms.umanitoba.ca](mailto:janders@ms.umanitoba.ca)

**Website:** [http://umanitoba.ca/science/biological\\_sciences/](http://umanitoba.ca/science/biological_sciences/)

Biology is one of the most rapidly evolving and diverse  
sciences in the modern world, exploring all aspects of life



from biomolecules to ecosystems. The Department of Biological Sciences is committed to advancing our understanding of biological structure and function, and developing new tools and technologies to address current and emerging problems facing all living organisms. Connections will be forged between molecules, cells, tissues, organs, organisms, populations, communities, and ecosystems, highlighting the need to explore all levels of biological interactions. Programs emphasize the organism as the key element in studies of the development and evolution of form and function, and the role in adaptations to the environment. Based on a core of fundamental biological principles, our programs explore diverse areas such as organismal biology, environmental biology, genetics, cell biology and development, physiology, ecology, behaviour, and systematics and evolution. The Department focuses on the integration of research and teaching expertise to create opportunities for growth and novel synergisms in the training of future leaders in the field.

#### 4.3.2 B.Sc. Honours: Biological Sciences

The Honours program is designed for students planning a professional career in Biological Sciences at the graduate level. Such students are strongly advised to enter the Honours program at the beginning of second year.

Appropriate courses will be arranged in consultation with the Theme Advisor who may be contacted through the Biological Sciences Office (212 Biological Sciences Building). Students are encouraged to select a specific theme area of study as part of their Biological Sciences program. Should a student not opt for one of the five theme groups, they may design their own program by completing the core course requirements plus 30 credit hours of 3000 and/or 4000 level Biological Sciences courses. See the information below outlining the different theme areas offered by the Department of Biological Sciences.

**To enter** the Biological Sciences Honours program a student must have completed at least 24 credit hours with a minimum GPA of 3.00, and obtained a minimum grade of "B" BIOL 1030, CHEM 1300, CHEM 1310, STAT 1000 and the 3 credit hours of specified Mathematics, Physics or Statistics are program requirements and students are strongly urged to complete these courses in first year.

**To continue** in the Biological Sciences Honours program, students must maintain a minimum GPA of 3.00, and complete a minimum of 9 credit hours during each Fall and Winter Term.

**To graduate** with the B. Sc. Honours degree, a student must achieve a minimum GPA of 3.00, and obtain a minimum grade of "C" on the courses that make up the 120 credit hours of the degree.

#### Four Year Honours Cooperative Option

Students interested in alternating academic terms and work terms of paid employment as part of their Honours Biological Sciences program may apply to enter the Cooperative Option in April of their second year in Honours Biological Sciences. This program provides students with 12 months of paid employment by the time they graduate. It enables them to obtain work experience with participating firms, government agencies and University units.

There are several themes offered within the Biological Sciences Program and the Cooperative Option can be completed within any of these areas of study. See below for a description of the different themes and the course requirements of those themes offered by the Department of Biological Sciences.

Students may apply for openings in the Biological Sciences Honours Cooperative Option after completing at least two years (60 credit hours) in the Honours program, usually in April of their second year. Before the first employment term begins, the prerequisite courses listed below must be completed. Acceptance and continuation in the program is dependent upon the student receiving employment placements. Students are encouraged to check with the Co-op office (214 Buller Building) for application deadlines.

Prerequisite courses to be completed before employment terms begin: BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, STAT 1000, 3 credit hours of specified Mathematics or Physics, BIOL 2300, BIOL 2500, BIOL 2520, and BIOL 3100 \*. In addition, students must complete 9 credit hours from program core courses as follows: students must select one course from Group A (BIOL 2200, BIOL 2210), plus one course from Group B (BIOL 2240, BIOL 2242, BIOL 2260), plus one additional course from either Group A or Group B. [\* A Pre-Co-op Workshop may be substituted for BIOL 3100 only to permit an employment term in September of Year 3, but BIOL 3100 must still be taken.]

Students should note that the course and grade requirements for the Biological Sciences Honours Cooperative Option are the same as those for the regular Honours program, with the addition of the Work Term courses (see above). **To continue** in the Biological Sciences Honours Cooperative program a student must maintain a minimum DGPA of 3.00, and successfully complete all work term courses.

Students should refer to the general faculty regulations for B. Sc. (Honours) Cooperative Options in Section 3.6.

Work term positions available to the students will be approved by the department and may include positions within Biological Sciences, other University departments or positions with employers outside the University. Employers will select the students they wish to employ. The first employment term will preferably be taken in January or May of the third year, but may under exceptional circumstances begin in the preceding September. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places



exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

The program will include three employment terms, each of 4-months duration, two of which may be consecutive. A fourth work term is optional. Students are required to register in and pay tuition for each employment term prior to its commencement. Students will be required to submit an employment report upon the completion of each employment term. In order to stay in the Cooperative program, a student must obtain a grade of "pass" for each work term report.

#### 4.3.3 B.Sc. (Major): Biological Sciences

The four year Major program is also designed for students planning a professional career in the Biological Sciences, but who may not be considering graduate training. It will provide intensive training in all areas of Biology comparable to that of the Honours program, but has less demanding performance requirements. Additionally, students may complete the Major degree requirements on a part-time basis if they so choose. Students who so wish, and have appropriate standing and course selection, may transfer to the Honours program at any time up to the commencement of Year 4.

Appropriate courses will be arranged in consultation with the Theme Advisor who may be contacted through the Biological Sciences Office, 212 Biological Sciences Building. Students are encouraged to select a specific theme area of study as part of their Biological Sciences program. See the information below outlining the different theme areas offered by the Department of Biological Sciences.

Course BIOL 4100 is not available to students in this program.

**To enter** the Biological Sciences four year Major program a student must have completed a minimum of 24 credit hours with a minimum DGPA of 2.00, and obtained a minimum grade of "C+" in BIOL 1030, CHEM 1300, CHEM 1310, STAT 1000 and the 3 credit hours of specified Mathematics, Physics or Statistics are program requirements and students are strongly encouraged to complete these courses in first year.

**To continue** in the Bachelor of Science Major degree, a student must maintain a minimum DGPA of 2.00.

**To graduate** with the Bachelor of Science (Major) in Biological Sciences, a student must obtain passing grades on all courses, and obtain a minimum GPA of 2.00 on the 120 credit hours that contribute to the degree.

#### Four Year Major Cooperative Option

Students interested in alternating academic terms and work terms as part of their Major Biological Sciences program may apply to enter the Cooperative Option in April of their second year in the Biological Sciences Major. This program provides students with 12 months of paid employment by the time they graduate. It enables them to obtain work

experience with participating firms, government agencies and University units.

Students may apply for openings in the Biological Sciences Major Cooperative Option after completing at least two years (60 credit hours) in the Major program, usually in April of their second year. Before the first employment term begins, the prerequisite courses listed below must be completed. Acceptance and continuation in the program is dependent upon the student receiving employment placements. Students are encouraged to check application deadlines with the Co-op program office (214 Buller Building).

Prerequisite courses to be completed before employment terms begin: BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, STAT 1000, 3 credit hours of specified Mathematics or Physics, BIOL 2300, BIOL 2500, BIOL 2520 and BIOL 3100\*. In addition, students must complete 9 credit hours from program core courses as follows: students must select one course from Group A (BIOL 2200, BIOL 2210), plus one course from Group B (BIOL 2240, BIOL 2242, BIOL 2260), plus one additional course from either Group A or Group B. [\* A Pre-Co-op Workshop may be substituted for BIOL 3100 only to permit an employment term in September of Year 3, but BIOL 3100 must still be taken.]

Students should note that the course and grade requirements for the Biological Sciences Major Co-operative Option are the same as those for the regular Major program (see above), with the addition of BIOL 3100 and the Work Term courses. **To continue** in the Biological Sciences Major Cooperative program, a student must have a Cumulative Grade Point Average of 2.00, and a pass on all work term courses.

Students should also refer to the general faculty regulations for B. Sc. (Major) Cooperative Options in Section 3.4.

Work term positions available to the students will be approved by the department and may include positions within Biological Sciences, other University departments or positions with employers outside the University. Employers will select the students they wish to employ. The first employment term will preferably be taken in January or May of the third year, but may under exceptional circumstances begin in the preceding September. Students are advised that satisfying the en-trance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

The program will include three employment terms, each of 4-months duration, two of which may be consecutive. A fourth work term is optional. Students are required to register in and pay fees for each employment term prior to its commencement. Students will be required to submit an employment report upon the completion of each employment term. In order to stay in the Cooperative program, a student must obtain a grade of "pass" for each work term report.



#### 4.3.4 Biological Sciences Theme Areas

**I. Cell, Molecular and Developmental Biology:** Students in the Department of Biological Sciences with an interest in the exciting field of cell and developmental biology can select the Cell, Molecular, and Developmental Biology theme for focus. This theme will provide students a selection of courses that highlight fundamental principles and many important advances in this rapidly growing area of contemporary biology. Students can concentrate on aspects that deal with the molecular structures and processes of cellular life and their roles in the function, reproduction, and development of living organisms. The theme is structured such that students can choose from a broad range of disciplines, including biochemistry, molecular biology, morphology, genetics, cell biology, and developmental biology. The organisms under study in this theme are equally diverse, ranging from microbes through to invertebrates, vertebrates, plants, and fungi. The Department collaborates with many other life sciences departments and this theme allows student to develop a highly flexibly course portfolio that includes courses from the Departments of Biological Sciences, Chemistry, Microbiology, or Plant Science.

**Specific courses required for the Cell, Molecular, and Developmental Biology Theme in addition to the core course requirements:** BIOL 2540 (3); *Plus a minimum of 6 Credit hours of Biochemistry:* CHEM 2770 (MBIO 2770) and CHEM 2780 (MBIO 2780); or CHEM 2210 and CHEM 2360 (MBIO 2360) and CHEM 2370 (MBIO 2370).

**II. Ecology and Environmental Biology:** Ecology is the study of interactions between organisms and their environment, both in natural settings and human-influenced habitats. In our society ecology and environmental biology provides a scientific link to the living world. Ecologists study the lives of many organisms including animals, plants, fungi, protists, and bacteria. Interactions among these organisms are investigated at many scales ranging from the microscopic to the global. At the individual level, ecology investigates the impact of environmental factors on organisms through their physiology and behaviour. Ultimately, ecologists link these factors to survival and reproduction in variable environments. At the population level, ecology examines the causes of fluctuations in numbers and changes in distribution of a single species. This work is often the focus of agencies concerned with exploitation, extinction, and rehabilitation of both commercially and esthetically important species. At the community and ecosystem level, ecology considers many coexisting species. It examines the interactions between species within the communities (competition, predation, parasitism, mutualism, etc.) as well as broader investigations of community structure and composition. Ultimately, the skills developed within this theme prepare students for future careers in academia, government agencies, private consulting companies, or NGOs whose mandates encompass ecological and environmental concerns.

**Specific courses required for the Ecology and Environmental Biology Theme in addition to the core course requirements:** BIOL 3310 (3); BIOL 3312 (3); BIOL 3314 (3); STAT 2000 (3).

**III. Environmental and Integrative Physiology:** The Environmental and Integrative Physiology theme will be of interest to a wide array of students interested in pursuing employment opportunities in the Environmental, Consulting, Pharmaceutical, Healthcare, and Professional job markets. Based on the suggested courses and sub themes within this program students will be able to graduate with an all inclusive degree or specialize in particular disciplines ranging from molecular physiology to whole organism physiology and eco/environmental physiology, a subject area that is at the interface between ecology and physiology. Students will be exposed to modern research techniques in lab classes and will be taught by instructors and faculty with active research programs within the Department of Biological Sciences.

**Specific courses required for the Environmental and Integrative Physiology Theme in addition to the core course requirements:** 6 Credit hours of Biochemistry CHEM 2770 (MBIO 2770) and CHEM 2780 (MBIO 2780); or CHEM 2210 and CHEM 2360 (MBIO 2360) and CHEM 2370 (MBIO 2370); Plus: two of the following courses (one of which is already required in the four-year Biological Sciences Degree programs): BIOL 3470 (3), BIOL 3472 (3) BIOL 3450 (3), BIOL 3452 (3).

**IV. Evolution and Biodiversity:** Evolution is broadly defined as “descent with modification” and is the process that generates the earth’s biodiversity. The theory of evolution provides a unifying framework for biology because all organisms are descended from a common ancestor. As a result, evolutionary principles permeate research and teaching throughout biology.

Evolutionary biology addresses two overarching questions. (1) What was the history of life? (2) What processes account for adaptation and diversification? Systematics reconstructs the history of life by studying relationships among species, and involves comparisons of physical appearance, development, biochemistry, genetics, behaviour, ecology and biogeography. Evolutionary Genetics investigates how processes such as natural selection, mutation, and migration interact to cause evolutionary change within populations. Evolutionary history, genetics, and ecological context are required to fully understand the evolution of traits, for example body size, wing shape or leaf structure. Thus evolution integrates knowledge from a wide spectrum of sub-disciplines within biology.

Evolutionary biology has wide-ranging practical applications. Principles of evolution are required to understand: the evolution of pathogens such as HIV and avian influenza; domestication of wild species and consequences of genetic modifications; the identification of natural products; long-term responses to environmental change; and human biology. Courses from this theme will prepare students for academia, medicine, and government agencies or NGO’s that emphasize the cataloguing and conservation of biological diversity.

**Specific course required for the Evolution and Biodiversity Theme in addition to the core course requirements:**



**List A:** One of the following: BIOL 3360, BIOL 4240, BIOL 4242, BIOL 4362

**List B:** One of the following: BIOL 2262, BIOL 3200, BIOL 3242, BIOL 3250, BIOL 3270, BIOL 4212, BIOL 4214, BIOL 4216, BIOL 4218.

**V. Integrative Biology:** The Integrative Biology theme will be of interest to students planning to pursue careers in the various biology sub disciplines and who wish an undergraduate degree that is “interdisciplinary” within the life science departments that cuts across the traditional boundaries. This program will suit students who are interested in the “after degree” program in Education or who are intending to apply to a professional program (e.g. Medicine, Dentistry, Pharmacy, Medical Rehabilitation) and who would like a broad background in the Life Sciences. With the appropriate choice of Biological Science courses it would be possible to indicate the Integrative Biology theme along with a second theme from the department.

**Specific courses required for the Integrative Biology Theme in addition to the core course requirements:** All five of the following (three of which are already designated as core courses in the four-year Biological Sciences Degree programs): BIOL 2200 (3), BIOL 2210 (3), BIOL 2240 (3), BIOL 2242 (3), MBIO 1010 (3); One of the following (one of which is already required in the four-year Biological Sciences Degree programs): BIOL 3450 (3), BIOL 3470; Plus: 18 credit hours in Biological Sciences (3000/4000 level courses) and 12 credit hours in Microbiology (3000/4000 level courses).

**Note:** a maximum of 15 credit hours of Biological Sciences and Microbiology courses at the 2000 level are permitted in the Integrative Theme for use toward the 3000/4000 level requirements of the degree.

#### 4.3.5 B. Sc. General Degree: Biological Sciences

Courses taken as part of a General degree program provide an introduction to the major fields of study in the Biological Sciences. Commencing in Fall Term 2009, students will have two options for the General Degree under the Department of Biological Sciences.

**Option A:** 18 credit hours of 2000, 3000, and (or) 4000 level Biological Sciences courses (subject to the Faculty requirement that of the 36 credit hours in the two chosen advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level);

**Option B:** Students may choose 36 credit hours from the Biological Sciences provided they select the following courses: each of BIOL 2300, BIOL 2500, BIOL 2520; one of BIOL 2200 or BIOL 2210; one of BIOL 2240, BIOL 2242, or BIOL 2260; plus 21 additional credit hours (2000 level or higher) from the Biological Sciences including at least a minimum of 6 credit hours at the 3000 or 4000 level.

Students anticipating a transfer to either the four year Major or Honours program at the end of their second or third year should consult with the Departmental Program Advisor before registering.

#### 4.3.6.1 Biological Science - Cell, Molecular and Developmental Biology Theme Charts

##### 4.3.6.1 Biological Sciences – Program Charts

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS: Cell, Molecular and Developmental Biology Theme (incl. Co-op) 120 CREDIT HOURS</b> (Courses listed in chart below and electives)			
BIOL 1020, BIOL 1030	BIOL 2300, BIOL 2500, BIOL 2520	BIOL 3100, BIOL 3300	BIOL 4100 (6)
CHEM 1300, CHEM 1310	Choose one course from each of:	BIOL 2540 (theme course)	
STAT 1000	Group A: BIOL 2200, BIOL 2210	Choose one of the following:	
	Group B: BIOL 2240, BIOL 2242,	BIOL 3450, BIOL 3470, BIOL 3472	



	BIOL 2260  One additional course from either Group A or Group B  Either both of CHEM 2770 and CHEM 2780; or all three of CHEM 2210, CHEM 2360, and CHEM 2370 (theme courses)	30 credit hours of 3000 or 4000 level Biology courses <sup>4</sup> (courses from outside Biology may be approved by the theme advisor).  Enough elective credit hours required to total 120 credit hours for the program.	
In Year 1 or Year 2 the following must be completed:  3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , PHYS 1020 or PHYS 1050  6 credit hours from the Faculty of Arts, including a required "W" course 30 Hours	30 Hours	<b>Work Terms (if Co-op Selected):</b>  BIOL 3980, BIOL 3990  30 Hours	<b>Work Terms (if Co-op Selected):</b>  BIOL 4980, BIOL 4990 (if necessary)  30 Hours

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>4-YEAR MAJOR: Cell, Molecular and Developmental Biology Theme (incl. Co-op)<sup>b</sup> 120 CREDIT HOURS</b> (Courses listed in chart below and electives)			
BIOL 1020, BIOL 1030  CHEM 1300, CHEM 1310  STAT 1000	BIOL 2300, BIOL 2500, BIOL 2520  Choose one course from each of:  Group A: BIOL 2200, BIOL 2210  Group B: BIOL 2240, BIOL 2242, BIOL 2260  One additional course from either Group A or Group B  Either both of CHEM 2770 and CHEM 2780; or all three of CHEM 2210, CHEM 2360, and CHEM 2370 (theme courses)	BIOL 3300  BIOL 2540 (theme course)  Choose one of the following:  BIOL 3450, BIOL 3470, BIOL 3472  30 credit hours of 3000 or 4000 level Biology courses <sup>4</sup> (courses from outside Biology may be approved by the theme advisor).  Enough elective credit hours required to total 120 credit hours for the program.	
In Year 1 or Year 2 the following must be completed:  3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , PHYS 1020 or PHYS 1050  6 credit hours from the Faculty of Arts, including a required "W" course 30 Hours	30 Hours	<b>Cooperative Option Requirements (if selected):</b>  BIOL 3100 <sup>6</sup> , BIOL 3980, BIOL 3990  30 Hours	<b>Cooperative Option Requirements (if selected):</b>  BIOL 4980, BIOL 4990 (if necessary)  30 Hours

**NOTES:**

- MATH 1510, MATH 1520, or MATH 1690 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300.
- IMPORTANT:** The programs need not be completed in the manner prescribed in the chart above. The charts indicate one possible arrangement of the 120 credit hours that make up the degree and are meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. These 120 credit hours are a combination of the courses outlined in the charts above and elective courses chosen by the student in consultation with the program advisors.
- For the Integrative Biology Theme only, a maximum of 15 credit hours of 2000 level Microbiology and Biological Sciences courses may be used towards the 30 hours of 3000/4000 level requirements.
- Courses from other departments or faculties may be acceptable for use towards the 30 credit hours of 3000/4000 level Biological Sciences courses required in the Honours and Major Degree programs. Please consult with the department for permission to use alternate courses.
- Students should confirm the new regulations of the B.Sc. General Degree with a Faculty of Science Student Advisor if they wish to choose 36 hours of advanced level study from the Department of Biological Sciences.
- BIOL 3100 is a required course in the Biological Sciences Major Co-op programs. (The number 6 in brackets indicates a six credit hour course.)



4.3.6.2 Biological Sciences - Ecology and Environmental Biology Theme Charts

4.3.6.2 Biological Sciences – Program Charts

<b>HONOURS: Ecology and Environmental Biology Theme (incl. Co-operative Option) 120 CREDIT HOURS</b>			
BIOL 1020, BIOL 1030	BIOL 2300, BIOL 2500, BIOL 2520	BIOL 3100, BIOL 3300	BIOL 4100 (6)
CHEM 1300, CHEM 1310	Choose one course from each of:	BIOL 3310, BIOL 3312, BIOL 3314 (theme courses)	
STAT 1000, STAT 2000 (theme course)	Group A: BIOL 2200, BIOL 2210	Choose one of the following:	
	Group B: BIOL 2240, BIOL 2242, BIOL 2260	BIOL 3450, BIOL 3470, BIOL 3472	
	One additional course from either Group A or Group B	21 credit hours of 3000 or 4000 level Biology courses <sup>4</sup> (courses from outside Biology may be approved by the theme advisor).	
		15 credit hours of approved electives	
In Year 1 or Year 2 the following must be completed:		<b>Work Terms (if Co-op Selected):</b>	<b>Work Terms (if Co-op Selected):</b>
3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , PHYS 1020 or PHYS 1050		BIOL 3980, BIOL 3990	BIOL 4980, BIOL 4990 (if necessary)
6 credit hours from the Faculty of Arts, including a required "W" course			
15 credit hours of approved electives			
30 Hours	30 Hours	30 Hours	30 Hours

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>4-YEAR MAJOR: Ecology and Environmental Biology Theme (incl. Co-op)<sup>5</sup> 120 CREDIT HOURS</b> (Courses listed in chart below and electives)			
BIOL 1020, BIOL 1030	BIOL 2300, BIOL 2500, BIOL 2520	BIOL 3300	
CHEM 1300, CHEM 1310	Choose one course from each of:	BIOL 3310, BIOL 3312, BIOL 3314 (theme courses).	
STAT 1000, STAT 2000 (theme course)	Group A: BIOL 2200, BIOL 2210	Choose one of the following:	
	Group B: BIOL 2240, BIOL 2242, BIOL 2260	BIOL 3450, BIOL 3470, BIOL 3472	
	One additional course from either Group A or Group B	21 credit hours of 3000 or 4000 level Biology courses <sup>4</sup> (courses from outside Biology may be approved by the theme advisor).	
		Enough elective credit hours required to total 120 credit hours for the program.	
In Year 1 or Year 2 the following must be completed:		<b>Cooperative Option Requirements</b>	<b>Cooperative Option Requirements</b>
3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , PHYS 1020 or PHYS 1050		<b>(if selected):</b>	<b>(if selected):</b>
6 credit hours from the Faculty of Arts, including a required "W" course		<b>BIOL 3100<sup>6</sup></b> , BIOL 3980, BIOL 3990	BIOL 4980, BIOL 4990 (if necessary)
30 Hours	30 Hours	30 Hours	30 Hour

NOTES:



1. MATH 1510, MATH 1520, or MATH 1690 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300.
2. **IMPORTANT:** The programs need not be completed in the manner prescribed in the chart above. The charts indicate one possible arrangement of the 120 credit hours that make up the degree and are meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. These 120 credit hours are a combination of the courses outlined in the charts above and elective courses chosen by the student in consultation with the program advisors.
3. For the Integrative Biology Theme only, a maximum of 15 credit hours of 2000 level Microbiology and Biological Sciences courses may be used towards the 30 hours of 3000/4000 level requirements.
4. Courses from other departments or faculties may be acceptable for use towards the 30 credit hours of 3000/4000 level Biological Sciences courses required in the Honours and Major Degree programs. Please consult with the department for permission to use alternate courses.
5. Students should confirm the new regulations of the B.Sc. General Degree with a Faculty of Science Student Advisor if they wish to choose 36 hours of advanced level study from the Department of Biological Sciences.
6. BIOL 3100 is a required course in the Biological Sciences Major Co-op programs.  
(The number 6 in brackets indicates a six credit hour course.)

**4.3.6.3 Biological Sciences - Environmental and Integrative Physiology Theme Charts**

**4.3.6.3 Biological Sciences – Program Charts**

<b>HONOURS: Environmental and Integrative Physiology Theme (incl. Co-op) 120 CREDIT HOURS</b> (Courses listed in chart below and electives)			
BIOL 1020, BIOL 1030  CHEM 1300, CHEM 1310  STAT 1000	BIOL 2300, BIOL 2500, BIOL 2520  Choose one course from each of:  Group A: BIOL 2200, BIOL 2210  Group B: BIOL 2240, BIOL 2242, BIOL 2260  Plus one additional course from either Group A or Group B  Either both of CHEM 2770 and CHEM 2780; or all three of CHEM 2210, CHEM 2360, and CHEM 2370 (theme courses).	BIOL 3100, BIOL 3300  Choose one of the following:  BIOL 3450, BIOL 3470, BIOL 3472  Choose two of: BIOL 3470, BIOL 3472, BIOL 3450 (if not already taken), or BIOL 3452 (theme courses).	BIOL 4100 (6)
In Year 1 or Year 2 the following must be completed:  3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , PHYS 1020 or PHYS 1050  6 credit hours from the Faculty of Arts, including a required "W" course		<b>Work Terms (if Co-op Selected):</b>  BIOL 3980, BIOL 3990	<b>Work Terms (if Co-op Selected):</b>  BIOL 4980, BIOL 4990 (if necessary)
30 Hours	30 Hours	30 Hours	30 Hours

<b>4-YEAR MAJOR: Environmental and Integrative Physiology Theme (incl. Co-op)<sup>6</sup> 120 CREDIT HOURS</b> (Courses listed in chart below and electives)		
BIOL 1020, BIOL 1030  CHEM 1300, CHEM 1310  STAT 1000	BIOL 2300, BIOL 2500, BIOL 2520  Choose one course from each of:  Group A: BIOL 2200, BIOL 2210  Group B: BIOL 2240, BIOL 2242, BIOL 2260	BIOL 3300  Choose one of the following:  BIOL 3450, BIOL 3470, BIOL 3472  Choose two of: BIOL 3470, BIOL 3472, BIOL 3450 (if not already taken), or BIOL 3452 (theme courses).



	Plus one additional course from either Group A or Group B.  Either both of CHEM 2770 and CHEM 2780; or all three of CHEM 2210, CHEM 2360, and CHEM 2370 (theme courses).	24 credit hours of 3000 or 4000 level Biology courses <sup>4</sup> (courses from outside Biology may be approved by the theme advisor).  Enough elective credit hours required to total 120 credit hours for the program.	
In Year 1 or Year 2 the following must be completed:  3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , PHYS 1020 or PHYS 1050  6 credit hours from the Faculty of Arts, including a required "W" course		<b>Cooperative Option Requirements</b>  <b>(if selected):</b>  <b>BIOL 3100<sup>6</sup></b> , BIOL 3980, BIOL 3990	<b>Cooperative Option Requirements</b>  <b>(if selected):</b>  BIOL 4980, BIOL 4990 (if necessary)
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

- MATH 1510, MATH 1520, or MATH 1690 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300.
- IMPORTANT:** The programs need not be completed in the manner prescribed in the chart above. The charts indicate one possible arrangement of the 120 credit hours that make up the degree and are meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. These 120 credit hours are a combination of the courses outlined in the charts above and elective courses chosen by the student in consultation with the program advisors.
- For the Integrative Biology Theme only, a maximum of 15 credit hours of 2000 level Microbiology and Biological Sciences courses may be used towards the 30 hours of 3000/4000 level requirements.
- Courses from other departments or faculties may be acceptable for use towards the 30 credit hours of 3000/4000 level Biological Sciences courses required in the Honours and Major Degree programs. Please consult with the department for permission to use alternate courses.
- Students should confirm the new regulations of the B.Sc. General Degree with a Faculty of Science Student Advisor if they wish to choose 36 hours of advanced level study from the Department of Biological Sciences.
- BIOL 3100 is a required course in the Biological Sciences Major Co-op programs. (The number 6 in brackets indicates a six credit hour course.)

**4.3.6.4 Biological Sciences - Evolution and Biodiversity Theme Charts**

**4.3.6.4 Biological Sciences – Program Charts**

<b>HONOURS: Evolution and Biodiversity Theme (incl. Co-operative Option) 120 CREDIT HOURS</b>			
BIOL 1020, BIOL 1030  CHEM 1300, CHEM 1310  STAT 1000	BIOL 2300, BIOL 2500, BIOL 2520  Choose one course from each of:  Group A: BIOL 2200, BIOL 2210  Group B: BIOL 2240, BIOL 2242, BIOL 2260  Plus one additional course from either Group A or Group B	BIOL 3100, BIOL 3300  Choose one of the following:  BIOL 3450, BIOL 3470, BIOL 3472  3 credit hours chosen from the Evolutionary Processes List (A) above.  3 credit hours chosen from the Biodiversity course List (B) above.  30 credit hours of 3000 or 4000 level Biology courses <sup>4</sup> (courses from outside Biology may be approved by the theme advisor).  9 credit hours of approved electives	BIOL 4100 (6)
In Year 1 or Year 2 the following must be completed:  3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , PHYS 1020 or PHYS 1050  6 credit hours from the Faculty of Arts, including a required "W" course  18 credit hours of approved electives		<b>Work Terms (if Co-op Selected):</b>  BIOL 3980, BIOL 3990	<b>Work Terms (if Co-op Selected):</b>  BIOL 4980, BIOL 4990 (if necessary)
30 Hours	30 Hours	30 Hours	30 Hours



<b>4-YEAR MAJOR: Evolution and Biodiversity Theme (incl. Co-op)<sup>6</sup> 120 CREDIT HOURS (Courses listed in chart below and electives)</b>			
BIOL 1020, BIOL 1030	BIOL 2300, BIOL 2500, BIOL 2520	BIOL 3300	
CHEM 1300, CHEM 1310	Choose one course from each of:	Choose one of the following:	
STAT 1000	Group A: BIOL 2200, BIOL 2210	BIOL 3450, BIOL 3470, BIOL 3472	
	Group B: BIOL 2240, BIOL 2242, BIOL 2260	3 credit hours chosen from the Evolutionary Processes List (A) above.	
	Plus one additional course from either Group A or Group B	3 credit hours chosen from the Biodiversity course List (B) above.	
		30 credit hours of 3000 or 4000 level Biology courses <sup>4</sup> (courses from outside Biology may be approved by the theme advisor).	
		Enough elective credit hours required to total 120 credit hours for the program.	
In Year 1 or Year 2 the following must be completed:		<b>Cooperative Option Requirements</b>	<b>Cooperative Option Requirements</b>
3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , PHYS 1020 or PHYS 1050		<b>(if selected):</b>	<b>(if selected):</b>
6 credit hours from the Faculty of Arts, including a required "W" course		<b>BIOL 3100<sup>6</sup></b> , BIOL 3980, BIOL 3990	BIOL 4980, BIOL 4990 (if necessary)
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

1. MATH 1510, MATH 1520, or MATH 1690 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300.
2. **IMPORTANT:** The programs need not be completed in the manner prescribed in the chart above. The charts indicate one possible arrangement of the 120 credit hours that make up the degree and are meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. These 120 credit hours are a combination of the courses outlined in the charts above and elective courses chosen by the student in consultation with the program advisors.
3. For the Integrative Biology Theme only, a maximum of 15 credit hours of 2000 level Microbiology and Biological Sciences courses may be used towards the 30 hours of 3000/4000 level requirements.
4. Courses from other departments or faculties may be acceptable for use towards the 30 credit hours of 3000/4000 level Biological Sciences courses required in the Honours and Major Degree programs. Please consult with the department for permission to use alternate courses.
5. Students should confirm the new regulations of the B.Sc. General Degree with a Faculty of Science Student Advisor if they wish to choose 36 hours of advanced level study from the Department of Biological Sciences.
6. BIOL 3100 is a required course in the Biological Sciences Major Co-op programs. (The number 6 in brackets indicates a six credit hour course.)

**4.3.6.5 Biological Sciences - Integrative Biology Theme Charts**

**4.3.6.5 Biological Sciences – Program Charts**

<b>HONOURS: Integrative Biology Theme (incl. Co-operative Option) 120 CREDIT HOURS</b>			
BIOL 1020, BIOL 1030	BIOL 2300, BIOL 2500, BIOL 2520	BIOL 3100, BIOL 3300	BIOL 4100 (6)
CHEM 1300, CHEM 1310	Required Theme courses:	Choose one of the following:	
STAT 1000	BIOL 2200, BIOL 2210, BIOL 2240, BIOL 2242	BIOL 3450, BIOL 3470, BIOL 3472	



	MBIO 1010	18 credit hours of 3000 or 4000 <sup>3</sup> level Biological Sciences courses <sup>4</sup> 12 credit hours of 3000 or 4000 <sup>3</sup> level Microbiology courses 15 credit hours of approved electives
In Year 1 or Year 2 the following must be completed:  3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , PHYS 1020 or PHYS 1050  6 credit hours from the Faculty of Arts, including a required "W" course  12 credit hours of approved electives		<b>Work Terms (if Co-op Selected):</b>  BIOL 3980, BIOL 3990  <b>Work Terms (if Co-op Selected):</b>  BIOL 4980, BIOL 4990 (if necessary)
30 Hours	30 Hours	30 Hours

<b>4-YEAR MAJOR: Integrative Biology Theme (incl. Co-op)<sup>6</sup> 120 CREDIT HOURS</b> (Courses listed in chart below and electives)		
BIOL 1020, BIOL 1030  CHEM 1300, CHEM 1310  STAT 1000	BIOL 2300, BIOL 2500, BIOL 2520  Required Theme course:  BIOL 2200, BIOL 2210, BIOL 2240, BIOL 2242  MBIO 1010	BIOL 3300  Choose one of the following:  BIOL 3450, BIOL 3470, BIOL 3472  18 credit hours of 3000 or 4000 <sup>3</sup> level Biology courses <sup>4</sup>  12 credit hours of 3000 or 4000 <sup>3</sup> level Microbiology courses (theme courses).  Enough elective credit hours required to total 120 credit hours for the program.
In Year 1 or Year 2 the following must be completed:  3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , PHYS 1020 or PHYS 1050  6 credit hours from the Faculty of Arts, including a required "W" course		<b>Cooperative Option Requirements</b>  <b>(if selected):</b>  <b>BIOL 3100<sup>6</sup></b> , BIOL 3980, BIOL 3990
30 Hours	30 Hours	<b>Cooperative Option Requirements</b>  <b>(if selected):</b>  BIOL 4980, BIOL 4990 (if necessary)  30 Hours

**NOTES:**

1. MATH 1510, MATH 1520, or MATH 1690 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300.
2. IMPORTANT: The programs need not be completed in the manner prescribed in the chart above. The charts indicate one possible arrangement of the 120 credit hours that make up the degree and are meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. These 120 credit hours are a combination of the courses outlined in the charts above and elective courses chosen by the student in consultation with the program advisors.
3. For the Integrative Biology Theme only, a maximum of 15 credit hours of 2000 level Microbiology and Biological Sciences courses may be used towards the 30 hours of 3000/4000 level requirements.
4. Courses from other departments or faculties may be acceptable for use towards the 30 credit hours of 3000/4000 level Biological Sciences courses required in the Honours and Major Degree programs. Please consult with the department for permission to use alternate courses.
5. Students should confirm the new regulations of the B.Sc. General Degree with a Faculty of Science Student Advisor if they wish to choose 36 hours of advanced level study from the Department of Biological Sciences.
6. BIOL 3100 is a required course in the Biological Sciences Major Co-op programs.



(The number 6 in brackets indicates a six credit hour course.)

#### 4.3.6.7 Biological Sciences - General Degree and Minor Requirements Charts

##### 4.3.6.7 Biological Sciences – Program Charts

GENERAL DEGREE (90 credit hours)	
BIOL 1020, BIOL 1030	18 credit hours of 2000, 3000, and (or) 4000 level Biological Sciences courses (subject to the Faculty requirement that of the 36 credit hours in the two advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level.);  <b>or</b>  Students may choose all 36 credit hours of advanced level courses from the Department of Biological Sciences as long as courses are selected following the provisions outlined below:  Each of BIOL 2300, BIOL 2500, BIOL 2520; one of BIOL 2200 or BIOL 2210; one of BIOL 2240, BIOL 2242 or BIOL 2260; plus 21 additional credit hours from the Biological Sciences including at least 6 credit hours at the 3000 or 4000 level <sup>6</sup> .
MINOR	
BIOL 1020 and BIOL 1030	12 credit hours from 2000, 3000, and/or 4000 level Biology courses.

##### NOTES:

1. MATH 1510, MATH 1520, or MATH 1690 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300.
  2. IMPORTANT: The programs need not be completed in the manner prescribed in the chart above. The charts indicate one possible arrangement of the 120 credit hours that make up the degree and are meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. These 120 credit hours are a combination of the courses outlined in the charts above and elective courses chosen by the student in consultation with the program advisors.
  3. For the Integrative Biology Theme only, a maximum of 15 credit hours of 2000 level Microbiology and Biological Sciences courses may be used towards the 30 hours of 3000/4000 level requirements.
  4. Courses from other departments or faculties may be acceptable for use towards the 30 credit hours of 3000/4000 level Biological Sciences courses required in the Honours and Major Degree programs. Please consult with the department for permission to use alternate courses.
  5. Students should confirm the new regulations of the B.Sc. General Degree with a Faculty of Science Student Advisor if they wish to choose 36 hours of advanced level study from the Department of Biological Sciences.
  6. BIOL 3100 is a required course in the Biological Sciences Major Co-op programs.
- (The number 6 in brackets indicates a 6 credit hour course.)

#### 4.3.6.8 Translation Chart for Former BOTN and ZOOL Course Numbers

Translation of former BOTN and ZOOL course number to the BIOL Prefix			
<b>Note: BIOL courses introduced since Fall 2009 will not be found in this chart. Refer to the course description section</b>			
2008-2009 Course Number		Course Title	New Number – Effective Fall Term 2009
BIOL 1000		Foundations of Life	BIOL 1000
BIOL 1010		Biological Diversity and Interaction	BIOL 1010
BIOL 1020		Biology 1 - Principles & Themes	BIOL 1020
BIOL 1030		Biology 2 - Biological Diversity, Function & Interactions	BIOL 1030
BIOL 1110		Health & Health Professions	BIOL 1110
BIOL 1340		State of the Earth's Environment	BIOL 1340
	ZOOL 1320	Anatomy of the Human Body	BIOL 1410
	ZOOL 1330	Physiology of the Human Body	BIOL 1412
BOTN 1010		Economic Plants	BIOL 1300
	ZOOL 2600	The Invertebrates	BIOL 2200
	ZOOL 2320	The Chordates	BIOL 2210
BOTN 2110		The Non-Flowering Plants	BIOL 2240
BOTN 2010		The Flowering Plants	BIOL 2242



BOTN 2210		Biology of Fungi & Lichens	BIOL 2260
BOTN 2370	ZOOL 2370	Principles of Ecology	BIOL 2300
BOTN 2180	ZOOL 2180	Introductory Toxicology	BIOL 2380
BOTN 2280	ZOOL 2290	Introductory Ecology	BIOL 2390
	ZOOL 2530	Human Physiology 1	BIOL 2410
	ZOOL 2540	Human Physiology 2	BIOL 2420
	ZOOL 2140	Human Reproductive Biology	BIOL 2440
BOTN 2460		Genetics 1	BIOL 2500
	ZOOL 2280	Cell Biology	BIOL 2520
	ZOOL 2150	Developmental Biology	BIOL 2540
BOTN 3570	ZOOL 3750	Skills in Biological Sciences	BIOL 3100
	ZOOL 3610	Advanced Invertebrate Biology	BIOL 3200
BOTN 3070		Vascular Flora of Manitoba	BIOL 3242
	ZOOL 3460	Introductory Parasitology	BIOL 3270
BOTN 3270		Forest Botany	BIOL 3280
BOTN 3280		Medicinal & Hallucinogenic Plants	BIOL 3290
BOTN 3000	ZOOL 3000	Evolutionary Biology	BIOL 3300
	ZOOL 3680	Foundations of Population Ecology	BIOL 3310
BOTN 3540		Community Ecology	BIOL 3312
BOTN 3420	ZOOL 3450	Field Ecology	BIOL 3314
	ZOOL 3380	Boreal Ecology	BIOL 3318
	ZOOL 3100	Animal Behaviour	BIOL 3360
	ZOOL 3500	Limnology	BIOL 3370
BOTN 3580	ZOOL 3580	Wetland Ecology	BIOL 3372
BOTN 2020		Plant Physiology	BIOL 3450
BOTN 3010		Environmental Plant Physiology	BIOL 3452
BOTN 3460		Genetics 2	BIOL 3500
	ZOOL 3070	Advanced Developmental & Cellular Biology	BIOL 3540
BOTN 3190		Plant Anatomy	BIOL 3550
	ZOOL 3060	Comparative Animal Histology	BIOL 3560
BOTN 3980	ZOOL 3980	Work Term 1	BIOL 3980
BOTN 3990	ZOOL 3990	Work Term 2	BIOL 3990
BOTN 4600	ZOOL 4110	Honours Thesis	BIOL 4100
	ZOOL 4170	Biology of Fishes	BIOL 4210
	ZOOL 4220	Systematics & Biogeography of Fishes	BIOL 4212
	ZOOL 4230	Biology of Amphibians & Reptiles	BIOL 4214
	ZOOL 4240	Biology of Birds	BIOL 4216
	ZOOL 4250	Biology of Mammals	BIOL 4218
	ZOOL 4260	Marine Biodiversity	BIOL 4220
BOTN 4040		Advanced Plant Systematics	BIOL 4240
BOTN 4130		Evolution of Plant Structure and Systems	BIOL 4242
BOTN 4210		Principles of Plant Pathology	BIOL 4250
	ZOOL 4730	Experimental Parasitology	BIOL 4260
	ZOOL 4720	Wildlife & Fisheries Parasitology	BIOL 4262
	ZOOL 4850	Applications of Population Ecology in Fisheries & Wildlife	BIOL 4310
BOTN 4650		Analysis of Biological Communities	BIOL 4312
	ZOOL 4820	Aquaculture	BIOL 4340
BOTN 4150		Plant Interactions	BIOL 4330
	ZOOL 4280	Behavioural Ecology and Cognitive Ethology	BIOL 4362
BOTN 4010		Aquatic Botany	BIOL 4374
	ZOOL 4840	Environmental Toxicology	BIOL 4380
	ZOOL 4710	Principles of Wildlife Management	BIOL 4390
BOTN 4120		Advanced Plant Stress Physiology	BIOL 4430
	ZOOL 4830	Comparative Animal Energetics	BIOL 4460
	ZOOL 4160	Sensory-Motor Physiology	BIOL 4470
	ZOOL 4600	Comparative Endocrinology	BIOL 4480
BOTN 4180		Molecular Genetics of Plant Development	BIOL 4500
	ZOOL 4150	Developmental Molecular Biology	BIOL 4540
	ZOOL 4270	Genes & Development	BIOL 4542
	ZOOL 4140	Microtechnique	BIOL 4560
BOTN 4800	ZOOL 4800	Special Topics in Field Biology	BIOL 4800



BOTN 4890	ZOOL 4890	Special Topics in Biology	BIOL 4890
BOTN 4980	ZOOL 4980	Work Term 1	BIOL 4980
BOTN 4990	ZOOL 4990	Work Term 2	BIOL 4990
		<b>Courses no longer offered</b>	
BOTN 2190	ZOOL 2190	Toxicological Principles	BIOL 2382
BOTN 3250		Fungal Ecology	BIOL 3330
	ZOOL 3530	Environmental Physiology of Animals 1	BIOL 3460
	ZOOL 3540	Environmental Physiology of Animals 2	BIOL 3462
	ZOOL 4200	Ecological Methods	BIOL 4320
	ZOOL 4210	Models for Behavioural Ecology	BIOL 4360
BOTN 4880	ZOOL 4880	Analysis of Ecological Problems	BIOL 4880

#### 4.3.7 Biological Sciences -1000 Level

**BIOL 1000** Biology: Foundations of Life Cr.Hrs.3  
(Formerly 071.100) A course in unifying principles of biology including cell biology, bioenergetics, cell division, genetics and evolution. May not be used for credit in a Major or Honours program in the Biological Sciences. Not to be held with BIOL 1001, BIOL 1020, BIOL 1021, the former 071.125, or 071.201. Prerequisite: Any grade 12 or 40S Mathematics course (50%), or equivalent.

**BIOL 1010** Biology: Biological Diversity and Interaction Cr.Hrs.3  
(Formerly 071.101) An introduction to biological diversity including prokaryotes, protists, fungi, plants and animals; the form and function of plants and animals and basic concepts of ecology. May not be used for credit in a Major or Honours program in the Biological Sciences. Not to be held with BIOL 1011, BIOL 1030, BIOL 1031, the former 071.125, or 071.201. Prerequisite: Any grade 12 or 40S Mathematics course (50%), or equivalent.

**BIOL 1020** Biology 1: Principles and Themes Cr.Hrs.3  
(Lab Required) A laboratory-based course in unifying principles of biology including cell biology, bioenergetics, cell division, genetics and evolution. This course is intended for major and honours students in the Biological Sciences. Not to be held with BIOL 1021, BIOL 1000, BIOL 1001 (071.100), BIOE 2590 (034.259), or the former 071.125, 071.123 or 071.201. Prerequisite: Biology 40S (or equivalent) and any 40S Mathematics (or equivalent) and one of 40S Chemistry or 40S Physics (or equivalent); or BIOL 1000 (C). Students who complete BIOL 1000 as the prerequisite for BIOL 1020 will not be allowed to use both BIOL 1000 and BIOL 1020 towards their degree program as the two courses may not be held for credit with one another.

**BIOL 1030** Biology 2: Biological Diversity, Function and Interactions Cr.Hrs.3  
(Lab Required) A laboratory-based course introducing biological diversity including prokaryotes, protists, fungi, plants and animals; the form and function of plants and animals and basic concepts of ecology. This course is intended for major and honours students in the Biological Sciences. Not to be held with BIOL 1031, BIOL 1010 or BIOL 1011 (071.101), BIOE 2590 (034.259), or the former 071.125, 071.123 or 071.201. Prerequisite: BIOL 1020 or BIOL 1021 (C). NOTE: BIOL 1030 is a prerequisite to further courses in Microbiology and to most courses in Biological Sciences. It is also intended for students proceeding to Agricultural and Food Sciences, Dentistry, Human Ecology, Medicine, Optometry, Pharmacy, Veterinary Science,

Physical Education and Science.

**BIOL 1110** Health and Health Professions Cr.Hrs.3  
(Formerly 071.111) Students discuss the inter-relationship between health, health determinants, and the impact that science, health-science, behavioural-social sciences, and technology, have on health care and the health professions. Participants will consider their own role as health care consumers. Open only to students who have completed less than six credit hours. For further information contact University 1.

**BIOL 1300** Economic Plants Cr.Hrs.3  
(Formerly BOTN 1010, 001.101) A survey of economically important plants and their products. The history of plant use, plants in folklore and medicine, fermentation and viticulture, domestication of plants, and forestry are the major topics covered. Chemical, structural, and nutritional aspects of plant products are also discussed. Not to be held with the former 001.206 or 001.233.

**BIOL 1340** The State of the Earth's Environment: Contemporary Issues Cr.Hrs.3  
(Formerly 071.134) A presentation of contemporary environmental issues focusing on the scientific basis of problems caused by the growth of human population, use and depletion of resources, pollution, and damage to the environment. The current state of our knowledge bases will be discussed, along with improvements in them that may be necessary. The course will consider needs for action, priorities, and opportunities. May not be used to meet a program requirement of an Honours or Major program in the Biological Sciences. Not to be held with ENVR 1000 (128.100).

**BIOL 1410** Anatomy of the Human Body Cr.Hrs.3  
(Lab Required) (Formerly ZOOL 1320, 022.132) Microanatomy and gross anatomy discussed including changes occurring from conception to old age. Although this course may be used as an elective in an Arts or Science program, it may not be used to meet a program requirement of an Honours or Major program in the Biological Sciences. No prerequisite. High school Biology strongly recommended.

**BIOL 1412** Physiology of the Human Body Cr.Hrs.3  
(Lab Required) (Formerly ZOOL 1330, 022.133) Function of all systems discussed with homeostatic regulatory mechanisms as foundation themes. Although this course may be used as an elective in an Arts or Science program, it may not be used to meet a program requirement of an Honours or Major program in the Biological Sciences. Not available to students who have previously obtained credit in,



or are currently registered in both of BIOL 2410 (or equivalent - ZOOL 2530, BIOL 2411, ZOOL 2531, 022.253) and BIOL 2420 (or equivalent - ZOOL 2540, BIOL 2421, ZOOL 2541, 022.254). Prerequisite: BIOL 1410 (ZOOL 1320, 022.132) (C); or one of BIOL 1030, BIOL 1031, or the former 071.125 (C). This prerequisite is waived for students in the Baccalaureate Program for Registered Nurses.

#### 4.3.7 Biological Sciences -2000 Level

**BIOL 2200** The Invertebrates Cr.Hrs.3  
(Lab Required) (Formerly ZOOL 2600, 022.260) Biology and phylogeny of invertebrates. Emphasis on common taxa and on those groups of particular phylogenetic significance. Not to be held with BIOL 2201 (ZOOL 2601). Prerequisite: one of BIOL 1030, BIOL 1031, or the former 071.125 (C).

**BIOL 2210** The Chordates Cr.Hrs.3  
(Lab Required) (Formerly ZOOL 2320, 022.232) A study of the origin, evolutionary history and structure of the major groups of Chordates. Provides the foundation for more specialized courses such as Biology of Fishes, Ornithology, and Systematics and Biogeography of Fishes. Not to be held with BIOL 2231 (ZOOL 2501, 022.250). Prerequisite: one of BIOL 1030, BIOL 1031, or the former 071.125 (C).

**BIOL 2240** The Non-Flowering Plants Cr.Hrs.3  
(Lab Required) (Formerly BOTN 2110, 001.211) An introduction to the mosses and liverworts, ferns and their allies, and conifers, specifically treating their structure, reproduction, identification and ecological significance. Not to be held with the former BOTN 2110, 001.211. Prerequisite: one of BIOL 1030, BIOL 1031, or the former 071.125 (C).

**BIOL 2242** The Flowering Plants Cr.Hrs.3  
(Lab Required) (Formerly BOTN 2010, 001.201) A study of the structure and function of the flowering plants. Lecture topics are supplemented by laboratory exercises that focus on the anatomy and morphology of roots, stems, leaves and reproductive organs. Not to be held with the former 001.230. Prerequisite: one of BIOL 1010 (071.101) (B), BIOL 1011 (B), BIOL 1030 (C), BIOL 1031 (C), or the former 071.125 (C).

**BIOL 2260** Biology of Fungi and Lichens Cr.Hrs.3  
(Lab Required)(Formerly BOTN 2210, 001.221) An introduction to the fungi, both free living and lichenized, with emphasis on the major taxonomic groupings, their organization and structure, their life histories, identification and general economic significance. Not to be held with BIOL 2261 or the former 001.321. Prerequisite: one of BIOL 1010 (071.101) (B), BIOL 1011 (B), the former 071.123 (B), BIOL 1030 (C), BIOL 1031 (C), or the former 071.125 (C).

**BIOL 2262** Biology of Algae Cr.Hrs.3  
(Lab Required) (Formerly BOTN 2290, 001.229, BIOL 3260) Lectures and laboratories dealing with the cellular features of major groups of algae and their phylogenetic and adaptive significance. The basics of algal taxonomy are also covered. Not to be held with the former courses BIOL 3260, 001.323, or 001.341. Prerequisite: One of BIOL 1030, BIOL 1031, or the former 071.125 (C).

**BIOL 2300** Principles of Ecology Cr.Hrs.3  
(Lab Required) (Formerly BOTN 2370, 001.237, ZOOL

2370, 022.237) Principles of ecology at the individual, population, community, and ecosystems levels. This course is also offered as AGECE 2370. It is the normal prerequisite to other courses in ecology. Not to be held with BIOL 2301 (BOTN 2371, ZOOL 2371), BIOL 2390 (BOTN 2280, 001.228, ZOOL 2290, 022.229), AGECE 2370 (065.237). Prerequisite: one of BIOL 1030, BIOL 1031, or the former 071.125 (C). Prerequisite or concurrent requirement: STAT 1000 or STAT 1001 (005.100) (D).

**BIOL 2380** Introductory Toxicology Cr.Hrs.3  
(Formerly BOTN 2180, 001.218, ZOOL 2180, 022.218) A survey of general principles underlying the effects of toxic substances on biological systems, including consideration of the history, scope and applications of toxicology, the mechanisms of toxic action, and some major types of toxicants. This course is also taught in Environmental Science as ENVR 2180 (128.218), and in Agriculture as AGRI 2180 (065.218). Not to be held with BIOL 2381, BIOL 2382 (BOTN 2190, ZOOL 2190, 001.219, 022.219), ENVR 2190 (128.219), or AGRI 2190 (065.219). Prerequisites: one of BIOL 1030, BIOL 1031, or the former 071.125 (C); and one of CHEM 1310, CHEM 1311 (002.131), or CHEM 1320 (002.132) (C).

**BIOL 2390** Introductory Ecology Cr.Hrs.3  
(Formerly BOTN 2280, 001.228, ZOOL 2290, 022.229) The course involves a study of the interrelationships of living organisms (including human) with each other and with their environment. It is not normally acceptable as a prerequisite to other courses in ecology. Not to be held with BIOL 2300 (BOTN 2370, ZOOL 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOOL 2371), or AGECE 2370 (065.237). Prerequisite: one of BIOL 1010, BIOL 1030, BIOL 1031, or the former 071.125 (C).

**BIOL 2410** Human Physiology 1 Cr.Hrs.3  
(Formerly ZOOL 2530, 022.253) The mechanisms of action of the body's major control systems (nervous and endocrine) and of the muscular and reproductive systems are examined. Not to be held with BIOL 2411 (ZOOL 2531) or BIOL 3460 (ZOOL 3530, 022.353). Prerequisite: a "C" or better in one of BIOL 1030, BIOL 1031, the former 071.125, or BIOL 1412 (ZOOL 1330, 022.133); or a "C+" or better in both BIOL 1000 (or equivalent - BIOL 1001, 071.100) and BIOL 1010 (or equivalent - BIOL 1011, 071.101).

**BIOL 2420** Human Physiology 2 Cr.Hrs.3  
(Formerly ZOOL 2540, 022.254) An examination of homeostatic regulation by the body's major effector organ systems (cardiovascular, respiratory, digestive, renal, and immune). Not to be held with BIOL 2421 (ZOOL 2541). Prerequisite: Completion of BIOL 2410 (ZOOL 2530, 022.253) (D), or BIOL 2411 (ZOOL 2531), or BIOL 3460 (ZOOL 3530, 022.353) (D); or consent of department.

**BIOL 2440** Human Reproductive Physiology Cr.Hrs.3  
(Formerly ZOOL 2140, 022.214) This course provides an in-depth understanding of human reproduction with particular emphasis on intrinsic control mechanisms and extrinsic methods of regulation of reproduction. This course also provides the basis for the understanding of alterations from normal mechanisms of reproductive processes. Prerequisites: BIOL 1410 (ZOOL 1320, 022.132) (C) and BIOL 1412 (ZOOL 1330, 022.133) (C); or consent of department. Check with the Department of Biological



Sciences for course availability.

**BIOL 2500** Genetics 1 Cr.Hrs.3  
(Lab Required) (Formerly BOTN 2460, 001.246) Principles of heredity, gametogenesis and the cytological basis of inheritance in plants and animals. The concepts of dominance and genetic interaction, sex and inheritance, linkage, chromosomal variations, quantitative and population genetics, the genetic code. Not to be held with BIOL 2501 (BOTN 2461), or PLNT 2520 (039.252). Prerequisite: one of BIOL 1030, BIOL 1031, or the former 071.125 (C).

**BIOL 2520** Cell Biology Cr.Hrs.3  
(Formerly ZOO 2280, 022.228) The microscopic and submicroscopic aspects of cellular structure and function are considered with emphasis on the living cell as a dynamic system. Not to be held with BIOL 2521 (ZOO 2281). Prerequisite: one of BIOL 1030, BIOL 1031, or the former 071.125 (C).

**BIOL 2540** Developmental Biology Cr.Hrs.3  
(Formerly ZOO 2150, 022.215) Principles and concepts of developmental biology including gametogenesis, fertilization, early and late development. Cellular, tissue and molecular aspects will be presented utilizing both invertebrate and vertebrate examples. Prerequisite: One of BIOL 1030, BIOL 1031, or the former 071.125 (C).

#### 4.3.7 Biological Sciences -3000 Level

**BIOL 3100** Skills in Biological Sciences Cr.Hrs.3  
This course will introduce students to the concepts and skills necessary to succeed in a Biology-based career, including: communication skills (scientific writing and oral presentations), critical thinking, strategies for employment and graduate training, familiarization with the range of biological research, and exposure to a variety of Biology-based careers. This course may not be held with the former BOTN 3570 (001.357) or ZOO 3750 (022.375). Prerequisite: This course is restricted to Honours and Major students in the Biological Sciences.

**BIOL 3200** Advanced Invertebrate Biology Cr.Hrs.3  
(Lab Required) (Formerly ZOO 3610, 022.361) Topics of current interest to be presented in lecture series given by staff. Students may undertake approved projects and may present reports and seminars. Prerequisite: BIOL 2200 (ZOO 2600, 022.260) or BIOL 2201 (ZOO 2601) (C).

**BIOL 3242** Vascular Flora of Manitoba Cr.Hrs.3  
(Lab Required) (Formerly BOTN 3070, 001.307) A survey of the vascular plants of Manitoba emphasizing identification, nomenclature and classification, and including brief accounts of the distribution and post-glacial history of the main floristic associations within the province. Students must submit a collection of at least 20 different vascular plants identified to species. A guide to the collection should be obtained from the Department of Biological Sciences office in the Spring/Summer prior to commencing the course. Prerequisite: BIOL 1010 (or equivalent - BIOL 1011, 071.101) (B); or one of BIOL 1030, BIOL 1031 or the former 071.125 (C).

**BIOL 3250** Lichens and Bryophytes Cr.Hrs.3  
(Lab Required) The biology, evolution, and ecology of lichens and bryophytes. Emphasis is placed on the role of

lichens and bryophytes in the ecosystem, gene flow, animal interactions, co-evolution, secondary compounds, and species identification. Not to be held with BIOL 3240 (BOTN 3260, 001.326) or BIOL 4246 (BOTN 4050, 001.405). Prerequisite: BIOL 1030 or BIOL 1031 or the former 071.125 (C).

**BIOL 3270** Introductory Parasitology Cr.Hrs.3  
(Lab Required) (Formerly ZOO 3460, 022.346) General course covering major parasitic phyla: namely, Protozoa, Platyhelminthes, Aschelminthes, Acanthocephala, and Arthropoda. Emphasis will be on principles of parasitology. Prerequisite or concurrent requirement: BIOL 2200 (ZOO 2600, 022.260) (C), or BIOL 2201 (ZOO 2601), or consent of department.

**BIOL 3280** Forest Botany Cr.Hrs.3  
(Formerly BOTN 3270, 001.327) An examination of the structure and dynamics of plant communities in forested ecosystems. Topics include forest type classification, physiological and anatomical responses of representative forest species, decomposition and nutrient cycling, disturbance and forest succession. Not to be held with the former 001.402. Prerequisites: BIOL 2242 (BOTN 2010, 001.201) (C); and one of BIOL 2300 (BOTN 2370, 001.237, ZOO 2370, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGE 2370 (065.237) (C); or consent of the department.

**BIOL 3290** Medicinal and Hallucinogenic Plants Cr.Hrs.3  
(Formerly BOTN 3280, 001.328) A botanical and historical survey of medicinal, hallucinogenic and poisonous plants used in various cultures. Not to be held with BIOL 3291. Prerequisite: a minimum of 30 hours of university credit, or consent of department.

**BIOL 3300** Evolutionary Biology Cr.Hrs.3  
(Lab Required) (Formerly BOTN 3000, ZOO 3000) Evolution is the ultimate cause of biological diversity. This course introduces the major questions and research methods in evolutionary biology. Topics include evolutionary genetics, adaptation, speciation, and the reconstruction of evolutionary history. Not to be held with the former 022.400. Prerequisites: a "C" or better in one of BIOL 2500 (BOTN 2460, 001.246), BIOL 2501 (BOTN 2461), or PLNT 2520 (039.252); and any one of the following with a minimum grade of "C": BIOL 2200 (ZOO 2600, 022.260), BIOL 2210 (ZOO 2320, 022.232), BIOL 2231 (ZOO 2501, 022.250F), BIOL 2240 (BOTN 2110, 001.211), BIOL 2260 (BOTN 2210, 001.221), BIOL 2261, BIOL 3260 (BOTN 2290, 001.229); or consent of department.

**BIOL 3310** Foundations of Population Ecology Cr.Hrs.3  
(Lab Required) (Formerly ZOO 3680) The study of living populations, through experimentation and theory, will be examined. Topics investigated will include population regulation, competition, predation, disease, harvest, nonlinear and spatial dynamics and individual based models. Concepts and methods are reinforced through tutorials and evaluated by assignments and examinations. Not to be held with the former 022.348. Prerequisites: a "C" or better in one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGE 2370 (065.237); and STAT 2000 or STAT 2001 (005.200) (C); or consent of department.



**BIOL 3312** Community Ecology Cr.Hrs.3  
(Formerly BOTN 3540, 001.354) Lectures and laboratories emphasizing the structure and function of terrestrial biotic communities with emphasis upon selected Manitoba situations. Prerequisite: a C or better in one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGE 2370 (065.237); or consent of department.

**BIOL 3314** Field Ecology Cr.Hrs.3  
(Formerly BOTN 3420, 001.342, ZOO 3450, 022.345) Problems, techniques and assumptions involved in measuring parameters of biological populations and environmental variables. A field trip will be held prior to the start of classes. Students must register in the department office by August 5. Prerequisites: a "C" or better in one of one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGE 2370 (065.237); and STAT 2000 or STAT 2001 (005.200) (D).

**BIOL 3318** Boreal Ecology Cr.Hrs.3  
(Formerly ZOO 3380, 022.338) A survey of ecological factors in the formation, evolution, and survival of northern biota including northern peoples. There will be optional weekend field trips. Prerequisite: a "C" or better in one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGE 2370 (065.237); or BIOL 2390 (ZOO 2290, 022.229, BOTN 2280, 001.228) (C); or consent of department.

**BIOL 3340** Biology of Primitive Fungi and Allies Cr.Hrs.3  
(Lab Required) Studies on the Biology of primitive fungi and slime moulds including their evolution, life histories, development, structure, taxonomy, biochemistry, and importance to humans. Environmental collection, baiting, isolation and axenic culturing stressed in laboratories. Prerequisite: BIOL 1010 (B); or BIOL 1030 (BIOL 1031) (C).

**BIOL 3350** Methods of Data Collection and Analysis in Ecology Cr.Hrs.3  
This course will consider methods of collection and analysis of ecological data, emphasizing experimental design of ecological studies, sampling, analysis of ecological data sets, and presentation techniques. This course may not be held for credit with BIOL 4320 (ZOO 4200, 022.420). Prerequisites: BIOL 2300 (C) and STAT 2000 or STAT 2001 (D); or consent of department.

**BIOL 3360** Animal Behaviour Cr.Hrs.3  
(Lab Required) (Formerly ZOO 3100, 022.310) An introduction to the study of animal behaviour including key concepts from the parent disciplines of ethology and comparative psychology, the genetic and physiological bases of behaviours, and evolutionary aspects introducing optimality and game theoretical models characteristic of modern behavioural ecology. Laboratory work involves the design and execution of a behavioural project at the Assiniboine Park Zoo. Not to be held with the former 022.343. Prerequisites: a "C" or better in one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGE 2370 (065.237); and BIOL 2210 (ZOO 2320, 022.232) (C); or consent of department.

**BIOL 3370** Limnology Cr.Hrs.3  
(Lab Required) (Formerly ZOO 3500, 022.350) Lectures

and laboratories providing an introduction to the physics, chemistry and biology of lakes. Prerequisite: a "C" or better in one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGE 2370 (065.237).

**BIOL 3372** Wetland Ecology Cr.Hrs.3  
(Formerly BOTN 3580, 001.358, ZOO 3580, 022.358) Lectures and field exercises examine the biotic (algae, macrophytes, invertebrates, and vertebrates) and abiotic (hydrology, nutrient cycling) properties of Delta Marsh, a prairie lakeshore wetland. Other wetland types, including peatlands, will also be considered in lectures and field trips. The course is offered in Summer Session at the university Field Station (Delta Marsh). Prerequisite: a C or better in one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGE 2370 (065.237); or consent of department.

**BIOL 3450** Plant Physiology Cr.Hrs.3  
(Lab Required) (Formerly BOTN 2020, 001.202) A study of the function of the flowering plants. The focus will be on photosynthesis, plant water relations, plant nutrition, and the role of hormonal and extrinsic factors in the regulation of plant development. Not to be held with PLNT 3500 or the former 001.230. Prerequisite: BIOL 2242 (BOTN 2010, 001.201) (C).

**BIOL 3452** Environmental Plant Physiology Cr.Hrs.3  
(Lab Required) (Formerly BOTN 3010, 001.301) An integrated study of the major physiological processes in higher plants, and how these processes influence growth and development of plants in natural ecosystems. Stress responses of plants to water, light and nutrients will be emphasized. Not to be held with PLNT 3500 (039.350), 001.317, or 001.467. Prerequisite: BIOL 3450 (BOTN 2020, 001.202) (C); and CHEM 1310 or CHEM 1311 (002.131) (C).

**BIOL 3470** Environmental Physiology of Animals 1 Cr.Hrs.3  
(Lab required) This course is intended to acquaint students with some of the major environmental challenges encountered by animals and stresses the diversity of physiological solutions to these problems in aquatic and terrestrial organisms. Areas covered may include thermal biology, circulation, gas exchange and buoyancy regulation. Laboratories explore related subjects in various animals. This course may not be held for credit with the former BIOL 3462, ZOO 3540 (022.354). Prerequisite: BIOL 2200 (C) or BIOL 2210 (C); or consent of department.

**BIOL 3472** Environmental Physiology of Animals 2 Cr.Hrs.3  
(Lab Required) This course is intended to acquaint students with the control and integration of organ systems and body functions of animals, and their biochemical and physiological adaptations to environmental perturbations. Areas covered may include neuroendocrinology, excretion, and water, salt, and acid-base balance. Laboratories explore related subjects in various animals. This course may not be held for credit with BIOL 3460, or the former ZOO 3530, or the former 022.353. Prerequisites: BIOL 2200 (C) or BIOL 2210 (C) or consent of department.

**BIOL 3500** Genetics 2 Cr.Hrs.3  
(Lab Required) (Formerly BOTN 3460, 001.346) The course complements Genetics I (BIOL 2500, BOTN 2460, 001.246, BIOL 2501, BOTN 2461) and deals with various aspects of linkage and crossing over, gene function, allelism, mutation



and repair, the use of bacteria and viruses as genetic tools, basics of developmental genetics and extra-nuclear inheritance. Not to be held with BIOL 3501. Prerequisite: BIOL 2500 (BOTN 2460, 001.246) (C), or BIOL 2501 (BOTN 2461) or PLNT 2520 (039.252 or 039.209) (C). Prerequisite or concurrent requirement: One of CHEM 2370, CHEM 2371 (002.237), MBIO 2370, MBIO 2371 (060.237), CHEM 2780 (002.278), or MBIO 2780 (060.278); or consent of department.

**BIOL 3540** Advanced Developmental and Cellular Biology Cr.Hrs.3  
(Lab Required) (Formerly ZOO 3070, 022.307) The course focuses on contemporary concepts and approaches in developmental biology, including theoretical and practical aspects. The emphasis is on the laboratory component. Prerequisite: BIOL 2540 (ZOO 2150, 022.215) (C); or consent of department.

**BIOL 3550** Plant Anatomy Cr.Hrs.3  
(Lab Required) (Formerly BOTN 3190, 001.319) A study of the anatomical aspects of the growth and development of plants cells, tissues and organs. Laboratory exercises will complement material. Not to be held with the former 001.316 or 001.403. Prerequisite: BIOL 2242 (BOTN 2010, 001.201) (C).

**BIOL 3560** Comparative Animal Histology Cr.Hrs.3  
(Lab Required) (Formerly ZOO 3060, 022.306) This course focuses on the cell and tissue organization of animals. Cell morphology and specialization, tissue types and a survey of the cellular and tissue organization of all organ systems are covered. The primary focus is on mammals but comparative aspects of other animal groups are also included. Not to be held with BIOL 3561 (ZOO 3061, 022.347). Prerequisite: One of BIOL 1030, BIOL 1031, or the former 071.125 (C). Recommended prerequisite: one of BIOL 2210 (ZOO 2320, 022.232), BIOL 2231 (ZOO 2501, 022.250), BIOL 2520 (ZOO 2280, 022.228), or BIOL 2521 (ZOO 2281).

**BIOL 3600** Biological Diversity and Sustainability Cr.Hrs.3  
Anthropogenic drivers of change of many components of biological diversity; the resulting impacts on ecosystem capacity to provide on-going goods and services that are essential constituents of well-being and ultimately sustainability. Prerequisites: BIOL 2300 (C); or BIOL 1030 (C) and BIOL 2390 (C).

**BIOL 3980** Work Term 1 Cr.Hrs.0  
(Formerly ZOO 3980, 022.398, BOTN 3980, 001.398) Work assignment in business, industry, or government for students registered in the Biological Sciences Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

**BIOL 3990** Work Term 2 Cr.Hrs.0  
(Formerly ZOO 3990, 022.399, BOTN 3990, 001.399) Work assignment in business, industry, or government for students registered in the Biological Sciences Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

### 4.3.7 Biological Sciences -4000 Level

**BIOL 4100** Honours Thesis Cr.Hrs.6  
(Formerly BOTN 4600, 001.460, ZOO 4110, 022.411) The student will conduct a research project, chosen in consultation with a Biological Sciences faculty member acting as an advisor, and produce a thesis in which the project, the results and conclusions are presented. The student will defend the thesis at an oral examination held on completion of the thesis. This course is restricted to final year Honours Biological Science students. Not to be taken concurrently with BIOL 4880 (ZOO 4880, 022.488, BOTN 4880, 001.488).

**BIOL 4210** Biology of Fishes Cr.Hrs.3  
(Lab Required) (Formerly ZOO 4170, 022.417) Lectures survey organ systems, life history, and the population biology of fishes. The ecological analysis of fish communities is addressed through a field trip and a series of workshops on the analysis of field data. Evaluation is based upon work related to the field trip and examinations based upon the lecture material. Not to be held with the former 022.467. Prerequisite: BIOL 2210 (ZOO 2320, 022.232) (C) or BIOL 2231 (ZOO 2501, 022.250) (C).

**BIOL 4212** Systematics and Biogeography of Fishes Cr.Hrs.3  
(Lab Required) (Formerly ZOO 4220, 022.422) A study of the evolutionary history, interrelationships and distribution patterns of the fish-like vertebrates. Laboratories will cover the identification of the major groups of fish-like vertebrates. Not to be held with the former 022.418 or 022.467. Prerequisite: BIOL 2210 (ZOO 2320, 022.232) (C) or BIOL 2231 (ZOO 2501, 022.250) (C); or consent of department.

**BIOL 4214** Biology of Amphibians and Reptiles Cr.Hrs.3  
(Lab Required) (Formerly ZOO 4230, 022.423) Lectures consider the evolution, biology and adaptations of amphibians and reptiles. Laboratories and student presentations will deal with classification, structure, identification, and methods of field and laboratory study of these animals. Not to be held with the former 022.476. Prerequisite: BIOL 2210 (ZOO 2320, 022.232) (C) or BIOL 2231 (ZOO 2501, 022.250) (C); or consent of department.

**BIOL 4216** Biology of Birds Cr.Hrs.3  
(Lab Required) (Formerly ZOO 4240, 022.424) Biology of birds including: morphology, systematics, evolution, life histories and breeding biology, ecology, migration, and distribution of birds. Not to be held with the former 022.468. Prerequisite: BIOL 2210 (ZOO 2320, 022.232) (C) or BIOL 2231 (ZOO 2501, 022.250) (C). Prerequisite or concurrent requirement: BIOL 3360 (ZOO 3100).

**BIOL 4218** Biology of Mammals Cr.Hrs.3  
(Lab Required) (Formerly ZOO 4250, 022.425) Structure, classification, evolution, life histories and distribution of mammals and their relation to human cultures. Techniques of studying mammals. Identification of the mammals of Manitoba. Offered in 2009-2010 and alternate years thereafter. Prerequisites: BIOL 2210 (ZOO 2320, 022.232) (C) or BIOL 2231 (ZOO 2501, 022.250) (C); and one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGEC 2370 (065.237) (C); or consent of department.

**BIOL 4220** Marine Biodiversity Cr.Hrs.3

(Lab Required) (Formerly ZOO 4260) Examines key ecological principles governing the maintenance of marine biodiversity, particularly in northern ecosystems. Topics include the definitions and global patterns of biodiversity and the ecological mechanisms influencing changes in these patterns in the context of applied population, community and ecosystem ecology. The course will also emphasize practical solutions, including fisheries' harvest models and marine protected areas. Prerequisites: a "C" or better in one of BIOL 2300 (BOTN 2370, ZOO 2370, 022.237, 001.237), BIOL 2301 (BOTN 2371, ZOO 2371) AGEC 2370 (065.237), or BIOL 2390 (BOTN 2280, ZOO 2290, 001.228, 022.229); or consent of department.

**BIOL 4240** Advanced Plant Systematics Cr.Hrs.3

(Lab Required) (Formerly BOTN 4040, 001.404) An examination of biosystematic principles and methods as they relate to all groups of plants. Prerequisite: BIOL 3242 (BOTN 3070, 001.307) (C).

**BIOL 4242** The Evolution of Plant Structures and Systems Cr.Hrs.3

(Lab Required) (Formerly BOTN 4130, 001.413) A comparative study of the morphological and anatomical characteristics of extant and extinct plants in the context of current evolutionary theory. Prerequisite: BIOL 2242 (BOTN 2010, 001.201) (C) or consent of department.

**BIOL 4250** Principles of Plant Pathology Cr.Hrs.3

(Lab Required) (Formerly BOTN 4210, 001.421) A study of the interactions of causal agents, environment, and host plants in the development of disease. Special attention will be given to diseases of local and regional significance. Laboratory exercises will illustrate the basic techniques of plant pathology. Prerequisites: BIOL 3450 (BOTN 2020, 001.202) (C) and BIOL 2260 (BOTN 2210, 001.221) (C) or BIOL 2261; or consent of department.

**BIOL 4260** Experimental Parasitology Cr.Hrs.3

(Lab Required) (Formerly ZOO 4730, 022.473) Principles of parasitology including immunology, ecology, biochemistry, and physiology. Students must carry out an experimental study. Prerequisite: BIOL 3270 (ZOO 3460, 022.346) (C).

**BIOL 4262** Wildlife and Fisheries Parasitology Cr.Hrs.3

(Lab Required) (Formerly ZOO 4720, 022.472) Parasites of major vertebrate groups of economic importance in temperate regions. Emphasis on: identification, means of control, and how to evaluate the impact of parasites on animal populations. A major project is required. Prerequisite: BIOL 3270 (ZOO 3460, 022.346) (C).

**BIOL 4310** Applications of Population Ecology in Fisheries and Wildlife Cr.Hrs.3

(Lab Required) (Formerly ZOO 4850) The material introduced in BIOL 3310 (ZOO 3680, 022.348) is developed into the quantitative analyses of field data to form a basis for conservation and management. Topics covered include: surplus harvest models, virtual population analysis, spatial population modeling, bioeconomics, and quantitative adaptive management. Concepts are reinforced through tutorials. Prerequisite: BIOL 3310 (ZOO 3680, 022.348).

**BIOL 4312** Analysis of Biological Communities Cr.Hrs.3

(Formerly BOTN 4650, 001.465) A survey of methods and approaches to the analysis of biological and environmental

data containing many variables. Offered in alternate years. Not to be held with BIOL 7440 (BOTN 7440). Prerequisites: a "C" or better in one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGEC 2370 (065.237); and STAT 2000 or STAT 2001 (005.200) (C).

**BIOL 4330** Plant Interactions Cr.Hrs.3

(Formerly BOTN 4150, 001.415) This course examines the ecology of interactions between plants and their biotic environment - other plants, animals and soil microbes. This is a reading course. Students will participate in discussions of key papers, examine recent and historic literature, and write a term paper examining a selected topic. Prerequisite: a "C" or better in BIOL 2300; or consent of department.

**BIOL 4340** Aquaculture Cr.Hrs.3

(Lab Required) (Formerly ZOO 4820, 022.482) Biology and methods of commercial culture of fish and other aquatic animals. Emphasis on: physiological, nutritional, genetic, pathological and economic aspects and on current and new technologies. Prerequisite: STAT 2000 or STAT 2001 (005.200) (D); and consent of instructor.

**BIOL 4362** Behavioural Ecology and Cognitive Ethology Cr.Hrs.3

(Lab Required) (Formerly ZOO 4280, 022.428) Examines proximate and ultimate questions relating to mating and parental behaviour, communication, social parasitism and animal intellect to provide insight into the intimate relationship between behavioural evolution and the environment. Laboratory and field exercises complement major topics considered in lectures. Not to be held with the former 022.448. Prerequisite: BIOL 3360 (ZOO 3100, 022.310), or the former 022.343 (C); or consent of department.

**BIOL 4374** Aquatic Botany Cr.Hrs.3

(Formerly BOTN 4010, 001.401) This course examines the relationship between algae, fungi and macrophytes, and the physical, chemical and biological properties of the aquatic environment. Specific adaptations to life in water, and patterns of distribution and succession in rivers, lakes and wetlands will be covered. Prerequisite: a "C" or better in one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGEC 2370 (065.237); or consent of department.

**BIOL 4380** Environmental Toxicology Cr.Hrs.3

(Lab Required) (Formerly ZOO 4840, 022.484) A survey of the principles governing the dynamics of chemicals in the environment, with emphasis on the biological systems, using case histories of known pollution problems. Prerequisites: a "C" or better in one of CHEM 2370, CHEM 2371 (002.237), MBIOL 2370, MBIOL 2371 (060.237), CHEM 2780 (002.278), or MBIOL 2780 (060.278); plus a "C" or better in one of BIOL 2300 (BOTN 2370, ZOO 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOO 2371) or AGEC 2370 (065.237); plus a "C" or better in one of BIOL 2410 (ZOO 2530, 22.253), BIOL 2411 (ZOO 2531) or BIOL 3460 (ZOO 3530, 022.353); and BIOL 3462 (ZOO 3540, 022.354, or 22.352) (C); or consent of department.

**BIOL 4390** Principles of Wildlife Management Cr.Hrs.3

(Lab Required) (Formerly ZOO 4710, 022.471) Introduction to the biological and socioeconomic goals of wildlife management and to the basic techniques of wildlife



management in terms of these goals. There will be four or five field trips. Some weekend field trips may be required. Prerequisite: BIOL 3310 (ZOO 3680, 022.348) (C); or consent of department.

**BIOL 4460 Comparative Animal Energetics Cr.Hrs.3**  
(Formerly ZOO 4830, 022.483) Energetic strategies of animals living in ecologically diverse environments. Integration of physiological, morphological and behavioural adaptations with an emphasis on vertebrate species. Prerequisites: BIOL 2210 (ZOO 2320, 022.232) (C) or BIOL 2231 (ZOO 2501, 022.250) (C); and one of BIOL 2410 (ZOO 2530, 022.253) (C), BIOL 2411 (ZOO 2531), BIOL 3460 (ZOO 3530, 022.353) (C), or BIOL 3462 (ZOO 3540, 022.354) (C); or consent of department.

**BIOL 4470 Sensory-Motor Physiology Cr.Hrs.3**  
(Lab Required) (Formerly ZOO 4160, 022.416) Information flow in the nervous system and the control of behaviour. The diverse roles that ion channels and synaptic circuitry play in sensory reception, neuronal integration and motor control are emphasized. Prerequisite: a "C" or better in one of BIOL 2410 (ZOO 2530, 022.253), BIOL 2411 (ZOO 2531), BIOL 3460 (ZOO 3530, 022.353), the former 022.245, 022.337, or 022.352; or consent of department.

**BIOL 4480 Comparative Endocrinology Cr.Hrs.3**  
(Lab Required) (Formerly ZOO 4600, 022.460) The structure, control, and function of vertebrate endocrine systems. BIOL 2520 (or equivalent - ZOO 2280, 022.228, BIOL 2521, ZOO 2281), and one of BIOL 2410 (or equivalent - ZOO 2530, 022.253, BIOL 2411, ZOO 2531), BIOL 3460 (ZOO 3530, 022.353) or the former 022.245 or 022.352, and a course in biochemistry are strongly recommended as prerequisites. Prerequisite: one of BIOL 1030, BIOL 1031, or the former 071.125 (C).

**BIOL 4500 Molecular Genetics of Plant Development Cr.Hrs.3**  
(Formerly BOTN 4180, 001.418) Analysis of plant development at the molecular level. Recent advances in model system genetics will be highlighted including seedling, root, shoot, and flower development as well as environmental responses. Prerequisite: BIOL 2500 (BOTN 2460, 001.246) or BIOL 2501 (BOTN 2461) (C).

**BIOL 4540 Developmental Molecular Biology Cr.Hrs.3**  
(Lab Required) (Formerly ZOO 4150, 022.415) An examination of early development with emphasis on the molecular events. Sex determination, gametogenesis and early embryogenesis will be discussed. Prerequisite: BIOL 2540 (ZOO 2150, 022.215) (C); or consent of department.

**BIOL 4542 Genes and Development Cr.Hrs.3**  
(Formerly ZOO 4270, 022.427) An in depth examination of selected topics in embryonic development, emphasizing the genetic control of the cell and molecular mechanisms that direct embryogenesis. The course will focus primarily on vertebrate development, but insights provided by studies on invertebrates will also be covered. Prerequisites: BIOL 2520 (ZOO 2280, 022.228) or BIOL 2521 (ZOO 2281)(C); and BIOL 2540 (ZOO 2150, 022.215) (C); or consent of department.

**BIOL 4552 Molecular Biology Techniques for Eukayotes Cr.Hrs.3**  
(Lab Required) A techniques-intensive course focusing on

the understanding of molecular biology techniques, troubleshooting problems, writing reproducible Materials and Methods for publications, accurate recording of procedures in lab journals, and bioinformatics exercises. Not to be held with BOTN 7460 (001.746) or the former 001.742. Prerequisite: BIOL 2500.

**BIOL 4560 Microtechnique Cr.Hrs.3**  
(Lab Required) This intensive course covers a spectrum of animal tissue and cell preparation techniques for microscopy and a survey of the variety of types of microscopy. These span all types of microscopy; live cell techniques, fixation and tissue processing methods for both paraffin embedding media and plastic media, sectioning and staining imaging and image processing, introduction to histochemistry and immunocytochemistry and electron microscopy. This is a practical course with a major hands-on laboratory emphasis. Prerequisites: BIOL 1030 or BIOL 1031 (C+); or consent of department. This course is restricted to students in year 3 or 4 of a Major or Honours degree program.

**BIOL 4610 The Business of Biotechnology Cr.Hrs.3**  
A critical examination of Biotechnology development and marketing. Lectures, tutorials and workshops providing in-depth study of topics including the legal, business, marketing, industrial and governmental, and scientific and ethical aspects of the biotechnology industry and, "for profit" science. Prerequisites: PLNT 2530 (C+), MBIO 3000 (C+), and MBIO 3410 or MBIO 3411 (C+). BIOL 2500 (or equivalent - BIOL 2501 (BOTN 2460, BOTN 2461, 001.246), BIOL 2520 (or equivalent - ZOO 2280, BIOL 2521, ZOO 2281, 022.228) and CHEM 3590 (002.359) are highly recommended.

**BIOL 4800 Special Topics in Field Biology Cr.Hrs.3**  
(Formerly BOTN 4800, 001.480, ZOO 4800, 022.480) Lectures, field studies and research projects on a selected topic. Course content to vary from year to year depending on instructor. Usually offered during the summer months. Prerequisite: consent of department.

**BIOL 4890 Special Topics in Biology Cr.Hrs.3**  
(Formerly BOTN 4890, 001.489, ZOO 4890, 022.489) Biology encompasses a broad array of ideas and special topic areas. In this course, students can pursue a specific topic in detail through lectures, seminars and research projects. Normally restricted to third and fourth year Honours and Major students. Prerequisite: Consent of department.

**BIOL 4980 Work Term 3 Cr.Hrs.0**  
(Formerly BOTN 4980, 001.498, ZOO 4980, 022.498) Work assignment in business, industry, or government for students registered in the Biological Sciences Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only)

**BIOL 4990 Work Term 4 Cr.Hrs.0**  
(Formerly BOTN 4990, 001.499, ZOO 4990, 022.499) Work assignment in business, industry, or government for students registered in the Biological Sciences Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only)



## 4.4 Biotechnology

**Campus Address/General Office:** 418 Buller Building / 360 Parker Building

**Telephone:** 204 474 9372 / 204 474 9321

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**Website:**

<http://umanitoba.ca/faculties/science/departments/microbiology/>, <http://umanitoba.ca/chemistry>

**Program Coordinators:** Peter Loewen, Head, Department of Microbiology  
Peter Budzelaar, Head, Department of Chemistry

### 4.4.1 Program Information

#### Biotechnology Honours Degree Requirements

**To enter** the Biotechnology Joint Honours program a student must have completed at least 24 credit hours with a minimum GPA of 3.00, and also obtained a minimum grade of "B" in CHEM 1310 and a minimum grade of "C+" in BIOL 1020. CHEM 1300, BIOL 1030, MATH 1500, PHYS 1020 (or PHYS 1050), and STAT 1000 are required courses in the program and students are strongly encouraged to complete these courses in first year. Six credit hours of Arts electives, including the written English course should also be taken in Year 1.

Students will select one stream (Analytical, Environmental/Biosystems or Molecular Biotechnology). Students are also encouraged to select a Minor in a complementary area. There are enough free electives to cover the 18 credit hours required for a Minor. All students must complete a Common Core of required courses plus required Stream Specific courses. The remaining courses can be selected from the list of Recommended Electives. This list is meant to give students some idea of appropriate electives; however, students have the option to choose courses not on the list in consultation with the Program Advisors.

**To continue** in the Biotechnology Joint Honours program, students must maintain a minimum GPA of 3.00 and complete a minimum of 9 credit hours during each Fall and Winter Term. No more than 15 credit hours of F grades may be accumulated, regardless of whether any course has been repeated and a higher grade achieved. Research Project in Biotechnology (BTEC 4000) must be taken in the final year of the program.

**To graduate** from the Biotechnology Joint Honours program students must achieve a minimum GPA of 3.00 and obtain minimum grade of "C" on the courses that contribute to the 120 credit hours that make up the degree.

Students who do not meet these minimum requirements will be required to withdraw from the program and may be eligible to enter the 4-Year Major degree program in Biotechnology. Depending on course selection students may also be eligible to enter other Major Programs (e.g. Biochemistry, Biological Sciences, Chemistry, or Microbiology) and/or the 3-year B.Sc. General Degree program.

#### Biotechnology Honours Cooperative Option

Students interested in alternating academic terms and terms of paid employment as part of their Honours Biotechnology program may enter the Cooperative Option in April of their second year in Honours Biotechnology. This program provides students with a minimum of 12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and university units.

The course and grade requirements **for entry** to this option are the same as those required for entry to the regular Honours program, as indicated in the chart. Students are required to complete the first and second year requirements of the program; and MBIO 3410 before they begin their first employment term. Students should refer to the general faculty regulations for B.Sc. (Honours) Cooperative Options in Section 3.6.

**To continue** in the Honours Cooperative program a student must maintain a minimum GPA of 3.00, successfully complete each work term, and complete a minimum of 9 credit hours during each academic term. Students should note that the grade requirements for the Cooperative Option are the same as that for the regular Honours program (see above).

Students must check with the Co-op office for the April application deadline information. They will normally be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each employment term.

#### Biotechnology 4-Year Major Degree Requirements

**To enter** the Biotechnology Joint Major program a student must have completed at least 24 credit hours with a minimum GPA of 2.00 and also obtained a minimum grade of "C+" in CHEM 1310 and a minimum grade of "C" in BIOL 1020. BIOL 1030, CHEM 1300, MATH 1500, PHYS 1020 or 1050, and STAT 1000 are required courses in the program and students are strongly urged to complete these courses in first year. Six credit hours of Arts electives, including the written English course should also be taken in Year 1.

Students will select one stream (Analytical, Environmental/Biosystems or Molecular Biotechnology).



Students are also encouraged to select a Minor in a complementary area. There are enough free electives to cover the 18 credit hours required for a Minor. All students must complete a Common Core of required courses plus required Stream Specific courses. The remaining courses can be selected from the list of Recommended Electives. This list is meant to give students some idea of appropriate electives; however, students have the option to choose courses not on the list in consultation with the Program Advisors.

**To continue** in the Major program a student must maintain a minimum GPA of 2.00. No more than 18 credit hours of F grades can be accumulated regardless of whether any course has been repeated and a higher grade achieved.

**To graduate** from the Biotechnology Joint Major degree, students must maintain a minimum GPA of 2.00 on the 120 credit hours that contribute to the degree. Students must also obtain a minimum grade of "C" on all common core and stream specific courses outlined below. There is no term registration load requirement in the Major degree.

Students who do not meet these minimum requirements will be required to withdraw from the program and will normally be eligible to enter the 3-Year B.Sc. General degree program.

#### Biotechnology 4 Year Major Cooperative Option

Students interested in alternating academic terms and terms of paid employment as part of their Major program in Biotechnology may enter the Cooperative Option in April of their second year in Biotechnology. This program provides students with a minimum of 12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and university units.

The course and grade requirements **for entry** to this option are the same as those required for entry to the regular Major program. MBIO 3410 is required in Year 3. Students are required to complete the first and second year requirements of the program and MBIO 3410 before they begin their first employment term. Students should refer to the general faculty regulations for B.Sc. (Major) Cooperative Options in Section 3.4.

Students must check with the Co-op office for the April application deadline information. They will normally be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each employment term.

#### Common Core Courses:

BIOL 2500, BIOL 2520, BIOL 4560, BIOL 4610, CHEM 2210, CHEM 2220, CHEM/MBIO 2360, CHEM /MBIO 2370, CHEM 2470, CHEM 3590, CHEM 4630, MBIO 1010, MBIO 2020, MBIO 3000, MBIO 3410, MBIO 4510, PLNT 2530, PLNT 4610

#### Program Stream Courses:

**Analytical Biotechnology:** MATH 1700<sup>1</sup>, CHEM 4370, CHEM 4590, CHEM 4670, CHEM 4700

**Environmental Biotechnology:** MATH 1700<sup>1</sup>, BIOE 3200, BIOE 3530, BIOE 4510, MBIO 4672

**Molecular Biotechnology:** BIOL 4550, MBIO 4600, MBIO 4610, MBIO 4672

**Note:** In some instances pre-requisites will be waived upon approval by the appropriate department.

#### Complementary Existing Minors that could satisfy the Recommended Electives (Minors require 18 cr hrs of prescribed courses):

Management, Animal Systems, Food Science, Plant Biotechnology, or Human Nutrition and Metabolism

#### Recommended General Electives if not required in Program stream:

All courses in above described Minors.

Appropriate pre-requisites must also be taken for all Electives.

BIOE 3200, BIOE 3530, BIOE 4510, BIOL 1300 (BOTN 1010), BIOL 2242 (BOTN 2010), BIOL 2380 (BOTN/ZOOL 2180), BIOL 2260 (BOTN 2210), BIOL 2300 (BOTN/ZOOL 2370), BIOL 3550 (BOTN 3190), BIOL 3290 (BOTN 3280), BIOL 3500 (BOTN 3460), BIOL 4500 (BOTN 4180), BIOL 4550 (BOTN 4460), BIOL 2540 (ZOOL 2150), BIOL 3540 (ZOOL 3070), BIOL 4540 (ZOOL 4150); CHEM 4360, CHEM 4370, CHEM 4590, CHEM 4620, CHEM 4670, CHEM 4700; COMP 1010, COMP 1020, COMP 1260, COMP 1270; ENG 1420; ENTR 2020; MATH 1700<sup>1</sup>; MBIO 2110, MBIO 3280 (MBIO 2280), MBIO 3010, MBIO 3430, MBIO 4440 (MBIO 3440), MBIO 3450, MBIO 3460, MBIO 3470, MBIO 4480 (MBIO 3480), MBIO 4010, MBIO 4410, MBIO 4470, MBIO 4600, MBIO 4610, MBIO 4672; PHAC 4030, PHAC 4040; PHIL 2740, PHIL 2830; PLNT 3140, PLNT 3500, PLNT 3520, PLNT 3570, PLNT 4310, PLNT 4330, PLNT 4550, PLNT 4560, PLNT 4570, PLNT 4580, PLNT



4590, PLNT 4600; STAT 2000

Other suitable courses may be selected through consultation with the department heads.

**4.4.2 Biotechnology Programs (incl. Co-operative Option if selected)**

4.4.2 Biotechnology Programs (incl. Co-operative Option if selected) - Offered Jointly by the Departments of Chemistry and Microbiology			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS (incl. Co-operative Option if selected)</b> 120 credit hours			
BIOL 1020, BIOL 1030 CHEM 1300, CHEM 1310 PHYS 1020 (or PHYS 1050) MATH 1500 <sup>1</sup> STAT 1000	CHEM 2210, CHEM 2220, CHEM 2360 (MBIO 2360), CHEM 2370 (MBIO 2370), CHEM 2470  MBIO 1010, MBIO 2020  BIOL 2500, BIOL 2520	CHEM 3590  MBIO 3000, MBIO 3030, MBIO 3410  PLNT 2530	CHEM 4630  MBIO 4520  BIOL 4560, BTEC 4000 (6), PLNT 4610
The requirements listed below can be completed in U1 or Year 2:		The requirements listed below can be completed in 3rd or 4th year:	
6 credit hours from the Faculty of Arts including the required "W" course		27 credit hours of <b>Required Program Stream</b> courses <sup>2</sup> and electives <sup>3</sup> .	
6 credit hours of <b>Required Program Stream</b> <sup>2</sup> courses or electives <sup>3</sup>		<b>Work Terms (if Co-op Selected):</b>  BTEC 3980, BTEC 3990	<b>Work Terms (if Co-op Selected):</b>  BTEC 4980 and /or BTEC 4990
30 Hours	30 Hours	30 Hours	30 Hours
<b>JOINT 4-YEAR MAJOR (incl. Co-operative Option if selected)</b> 120 credit hours			
BIOL 1020, BIOL 1030 CHEM 1300, CHEM 1310 PHYS 1020 (or PHYS 1050) MATH 1500 <sup>1</sup> STAT 1000	CHEM 2210, CHEM 2220, CHEM 2360 (MBIO 2360), CHEM 2370 (MBIO 2370), CHEM 2470  MBIO 1010, MBIO 2020  BIOL 2500, BIOL 2520	CHEM 3590  MBIO 3000, MBIO 3030, MBIO 3410  PLNT 2530	CHEM 4630  MBIO 4520  BIOL 4560  PLNT 4610
The requirements listed below can be completed in U1 or Year 2:		The requirements listed below can be completed during 3rd and 4th year:	
6 credit hours from the Faculty of Arts including the required "W" course		33 credit hours of <b>Required Program Stream Courses</b> <sup>2</sup> and approved electives <sup>3</sup> .	
6 credit hours of <b>Required Program Stream Courses</b> <sup>2</sup> and / or approved electives <sup>3</sup>		<b>Work Terms (if Co-op Selected):</b>  BTEC 3980, BTEC 3990	<b>Work Terms (if Co-op Selected):</b>  BTEC 4980 and /or BTEC 4990
<b>NOTES:</b>			
1. MATH 1510 or 1520 may be used in place of MATH 1500; MATH 1710 may be used in place of MATH 1700.			
2. Program stream courses requirements can be found above the Biotechnology program charts in section 4.4.1.			
3. Refer to list of recommended elective courses and complementary Minor programs (listed above charts) prior to registration in your electives.			
(The number 6 in brackets indicates a 6 credit hour course.)			



### 4.4.3 Biotechnology

#### **BTEC 3980** Work Term 1 Cr.Hrs.0

Work assignments in business, industry or government for students registered in the Biotechnology Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

#### **BTEC 3990** Work Term 2 Cr.Hrs.0

Work assignments in business, industry or government for students registered in the Biotechnology Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

#### **BTEC 4000** Research Project in Biotechnology Cr.Hrs.6

(Lab Required) Students can carry out independent biotechnology based research in their area of interest under the supervision of a faculty member or an approved external biotechnology professional. Results will be presented as an interim oral report and a written journal style paper. Registration restricted to Year 4 Honours Biotechnology students. Not to be held with any other Research Project courses such as MBIO 4530 or CHEM 4710.

#### **BTEC 4980** Work Term 3 Cr.Hrs.0

Work assignments in business, industry or government for students registered in the Microbiology Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

#### **BTEC 4990** Work Term 4 Cr.Hrs.0

Work assignments in business, industry or government for students registered in the Biotechnology Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

## 4.5 Department of Chemistry

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### 4.5.1 Department of Chemistry Program Information

Chemistry is the science concerned with the properties of atoms and molecules, of which all matter is composed. Chemistry is important for all aspects of the material world - food production; the manufacture of medicines, textiles, and plastics; energy production; identifying environmental problems and remedies; and understanding the workings of living organisms. The department offers study in analytical, inorganic, organic and physical chemistry, and in biochemistry.

**Chemistry Club:** The Chemistry Club is the University of Manitoba Student Chapter of the Chemical Institute of Canada. The aim of the organization is to advance interest in

chemistry. All students engaged in chemical studies are eligible for membership in the chapter and are encouraged to apply. Regular meetings, tours, publications, etc., are planned by each year's membership.

**Scholarships and Awards:** Several scholarships and awards are granted each year to Honours and Major students in Chemistry, Biochemistry, and Biotechnology on the basis of outstanding academic performance. To be eligible for these awards for any regular session, students are normally required to have completed a full program with a minimum of 18 credit hours of Chemistry in that session. They must also be registered for a full program with a minimum of 18 credit hours of Chemistry in the next regular session. Additional information is available from the Chemistry general office.

The department must approve a student's Honour or Major program each session. Students must also obtain departmental approval for any and all revisions to their program.

### Honours Requirements

**To enter** the Honours program in Chemistry, a student must have completed at least 24 credit hours with a minimum DGPA of 3.00, and also obtained a minimum grade of "B" in CHEM 1310. CHEM 1300, MATH 1500, MATH 1700, PHYS 1020 (1050), and PHYS 1070 are required courses in this program and students are strongly encouraged to complete these courses in first year.

**To continue** in the Chemistry Honours program, students must maintain a minimum DGPA of 3.00 and complete a minimum of 9 credit hours during each Fall and Winter Term.

**To graduate** from the Chemistry Honours program students must achieve a minimum GPA of 3.00 and obtain a minimum grade of "C" on the courses that make up the 120 credit hours of the degree.

### Honours Cooperative Option

Students interested in alternating academic terms and terms of paid employment as part of their Honours Chemistry program may enter the Co-operative Option in April of their second year in Honours Chemistry. This program provides students with a minimum of 12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and university units.

The course and grade requirements for entry to this option are the same as those required for entry to the regular Honours program, as indicated in the chart. Students are required to complete 24 credit hours of Chemistry (including CHEM 2470 and either CHEM 2280 or CHEM 2290) before they begin their first employment term. Students should refer to the general faculty regulations for B.Sc. (Honours) Co-operative Options in Section 3.6.



Students should note that the grade requirements for the Cooperative Option are the same as that for the regular Honours program. To continue in and graduate from the Honours Cooperative program a student must have a Degree Grade Point Average of 3.00. Each academic term while registered in Honours must comprise a minimum of 9 credit hours. To graduate with the Honours degree (Co-operative Option), a student must also have a minimum grade of "C" in all courses that contribute to the degree.

Students must apply for and be accepted into the Co-op program. The April application deadline information can be obtained by contacting the Co-op office. Students will be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each employment term.

#### Four Year Major Requirements

**To enter** the Chemistry Major program a student must have completed at least 24 credit hours with a minimum DGPA of 2.00 and also obtained a minimum grade of "C+" in CHEM 1310, CHEM 1300, MATH 1500, MATH 1700, PHYS 1020 (1050), and PHYS 1070 are required courses in this program and students are strongly encouraged to complete these courses in first year.

**To continue** in the Major program, a student must have a DGPA of 2.00 at each point of assessment.

**To graduate** from the Chemistry Major degree, students must present a grade of "C" or higher on the 54 credit hours of Chemistry required in the degree plus the specified Mathematics and Physics courses. Additionally, students must obtain a DGPA of 2.00.

Students who, at the end of Year 1, are undecided between the four year Major and Honours programs should note that the prescription for Honours Year 2 satisfies both the Honours and Major program requirements.

#### Major Cooperative Option

Students interested in alternating employment terms and academic terms as part of their Major Chemistry program may enter the Co-operative Option in April of their second year in Chemistry. This program provides students with a minimum of 12 months of paid employment by the time they

graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and University units.

The course and grade requirements **for entry** to this option are the same as those required for entry to the Chemistry Major program. Students are required to complete 24 credit hours of Chemistry (including CHEM 2470 and either CHEM 2280 or CHEM 2290) before they begin their first work term. To continue in the Major program, a student must have a DGPA of 2.00 at each point of assessment. To graduate with the Major degree (Cooperative Option), students must present a grade of "C" or better on the 54 credit hours of Chemistry required in the degree and a Degree Grade Point Average of 2.00. See the general faculty regulations for B.Sc. (Major) Co-operative Option in Section 3.4.

Students will apply for openings in the Co-operative Option in April of their second year in the Major program. They will be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each employment term.

#### Chemistry Program Focus Areas

Students may elect to take courses that, in combination, make up a Chemistry focus area. Currently, there are eight Chemistry focus areas. They are: Bioanalytical, Biopharmaceutical, Biophysical, Environmental, Materials Science, Organic, Physical, and Quantum / Computational. Each focus area has specific course requirements that students will satisfy in order to graduate and receive the focus area notation on their transcripts. Other focus areas may be selected with approval from the Department Head.

**Required Courses for each Chemistry Focus Area (Note: Students are responsible for completing all prerequisite courses required for the completion of a specific Focus Area). The below course listings are not meant to be limiting. Plausible substitutions will be reviewed and approved by the Department of Chemistry on an individual basis.**

**Bioanalytical:** 18 credit hours chosen from: CHEM 2550, CHEM 2370, CHEM 3570, CHEM 4550, CHEM 4590, CHEM 4630, CHEM 4660; plus a minimum of 9 credit hours from: BGEN 3020 (6), MBIO 2020, MBIO 3410, PHYS 2600, PHYS 2610, PHYS 2260, STAT 2000.



**Biopharmaceutical:** Each of: CHEM 3390, CHEM 3580, CHEM 4580, CHEM 4590, CHEM 4670, CHEM 4690; plus 9 credit hours chosen from: BIOL 2380, BIOL 2410, BIOL 2420, BIOL2520, BIOL 3290, BIOL 4470

**Biophysical:** 18 credit hours chosen from: CHEM 2370, CHEM 3360, CHEM 3370, CHEM 3490, CHEM 3570, CHEM 4590, CHEM 4620, CHEM 4630, CHEM 4640, CHEM 4700; plus 9 credit hours chosen from: BIOL 2500, BIOL 2520, MBIO 2410, MBIO 3460, MBIO 4540

**Environmental:** Each of: CHEM 2370, CHEM 2550, CHEM 4550, CHEM 4590, and 6 credit hours of 3000 or 4000 level Chemistry courses; plus at least 9 credit hours chosen from: ENVR 1000, ENVR 2000, ENVR 2180 (BIOL 2380), ENVR 3180, BIOL 4380.

**Materials Science:** Each of: CHEM 3360, CHEM 3370, CHEM 3490, CHEM 4570, CHEM 4590, CHEM 4680; plus 9 credit hours from: BIOE 3320, ECE 3600, PHYS 2600, PHYS 2610. (MATH 1300 is highly recommended but does not count toward the 9 credit hour of non-Chemistry requirements).

**Organic:** 27 credit hours from: CHEM 3390, CHEM 3580, CHEM 4580, CHEM 4590, CHEM 4620, CHEM 4630, CHEM 4660, CHEM 4670, CHEM 4680, CHEM 4690. (**Note: There are no non-Chemistry courses in the Organic Chemistry Focus Area**)

**Physical:** Each of: CHEM 3360, CHEM 3370, CHEM 3490, CHEM 4640, CHEM 4650, CHEM 4660; plus 9 credit hours from: MATH 2750 (6), MATH 2800, PHYS 2390, PHYS 2490, PHYS 2600, PHYS 2610, PHYS 3680. (MATH 1300 is highly recommended but does not count toward the 9 credit hour of non-Chemistry requirements).

**Quantum/Computational:** Each of: CHEM 3360, CHEM 3370, CHEM 3580, CHEM 4640, CHEM 4660, CHEM 4670; plus 9 credit hours from: COMP 2160, COMP 2190, MATH 2300, MATH 2600, PHYS 2380, PHYS 4250, PHYS 4520.

### Three Year Requirements

Courses taken as part of a three-year degree program provide an introduction to the major fields of study in Chemistry. Commencing in Fall Term 2010, students will have two options for a three year Degree under the Department of Chemistry.

**Option A – Three Year General:** As prescribed with all other faculty regulations in Section 3.2, students in this program must select 18 credit hours of 2000, 3000, and (or) 4000 level courses from each of **two** Science areas. To satisfy the requirement in the area of Chemistry, students must select a minimum of 18 credit hours from the following list of advanced level courses: CHEM 2210, CHEM 2220,

CHEM 2280, CHEM 2290, CHEM 2360, CHEM 2370, CHEM 2400 (CHEM 2380), CHEM 2470, CHEM 3360, CHEM 3370, CHEM 3390, CHEM 3400 (CHEM 3380), CHEM 3570, CHEM 3580, CHEM 3590, CHEM 4360, CHEM 4370, CHEM 4570, CHEM 4580, CHEM 4590, CHEM 4620, CHEM 4630, CHEM 4640, CHEM 4660, CHEM 4670, CHEM 4680, CHEM 4690 (subject to the Faculty requirement that of the 36 credit hours in the two advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level).

Courses **not allowed** for use as advanced level courses in the 3-Year General Degree are: CHEM 2240, CHEM 2550, CHEM 2560, CHEM 2770, CHEM 2780, CHEM 2860, CHEM 4550, CHEM 4600, CHEM 4650, CHEM 4700, and CHEM 4710.

### Option B - Three Year B.Sc. – Chemistry Focus:

Students that choose this path for their three-year degree program will follow the program chart below. The 24 credit hours of introductory courses and 36 credit hours of advanced level requirements have been prescribed in such a way so that students that follow the chart can seamlessly transfer to a 4-year Chemistry Honours or Major degree program should they choose to do so after the completion of the 90 credit hours listed in the chart.

Students anticipating a transfer to either the four year Major or Honours program at the end of their second or third year should consult with the Departmental Program Advisor before registering.

### Laboratory Exemption Regulations

- valid for two calendar years only
- lab exemption given only one time per course
- laboratory marks are carried forward to the next course attempt
- students are responsible for laboratory questions on tests and examinations
- students must earn a minimum of 60% on the laboratory to be eligible for an exemption.

### Biochemistry and Biotechnology Programs

The Department of Chemistry, in conjunction with the Department of Microbiology, offers Joint Honours programs, Joint Honours Co-operative Options, Joint four year Major programs and a Joint four year Major Co-operative Options in Biochemistry and Biotechnology. See sections 4.2 *Biochemistry Program* and 4.4 *Biotechnology Program* for full details.

### 4.5.2 Chemistry Honours Degree Program Chart

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS<sup>4</sup> (incl. Co-operative Option if selected) 120 CREDIT HOURS</b>			



CHEM 1300, CHEM 1310 (B)  PHYS 1050 (or PHYS 1020) and PHYS 1070  MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2290, CHEM 2400, CHEM 2470, CHEM 2860 (CHEM 2360)	CHEM 3400, CHEM 3590	CHEM 4600, CHEM 4710 (6)
In Year 1 or Year 2 the following must be completed:  6 credit hours from the Faculty of Arts, which should include the required "W" course  3 credit hours from Mathematics, Statistics or Computer Science courses <sup>3</sup>  12 credit hours of approved electives in years one and two <sup>6</sup>		Sufficient credit hours (18) from the 2000, 3000 and 4000 level Chemistry <sup>4</sup> courses not yet taken to total a minimum of 60 credit hours. These credit hours may make up part of a focus area.  9 credit hours of non-Chemistry courses which are part of a designated focus area <sup>4</sup> . If no Focus Area is selected, students must choose 9 credit hours of Chemistry courses.  18 credit hours of approved electives in years three and four <sup>6</sup>	
		<b>Work Terms (if Co-op selected):</b>  CHEM 3980, CHEM 3990	<b>Work Terms (if Co-op selected):</b>  CHEM 4980 and/or CHEM 4990
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

1. MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700; MATH 1690 may be taken in place of MATH 1500 and MATH 1700.
2. PHYS 1020 may be used in place of PHYS 1050; and, in the 3-year degree only - PHYS 1030 may be used in place of PHYS 1070. Students planning on completing a 4-year degree in Chemistry are required to complete PHYS 1070.
3. MATH 1010, MATH 1020, MATH 1190, MATH 1191, COMP 1260 and COMP 1270 may not be used to satisfy this requirement.
4. Students may elect to complete the requirements set out in one of the Chemistry focus areas. If a student opts for one of the focus areas, they should consult with the Department of Chemistry and a Science Student Advisor for information regarding specific course requirements for each focus area.
5. IMPORTANT: The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.
6. Elective courses should be selected in consultation with the Department of Chemistry and/or a Faculty of Science Student Advisor.

**4.5.3 Chemistry Major Degree Program Chart**

<b>4-YEAR MAJOR<sup>4,5</sup> (incl. Co-operative Option if selected) 120 CREDIT HOURS</b> (comprising courses listed in chart below, and electives)			
CHEM 1300, CHEM 1310 (C+)  PHYS 1050 (or PHYS 1020 (C+)) and PHYS 1070  MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2290, CHEM 2400, CHEM 2470, CHEM 2860 (CHEM 2360)	CHEM 3400, CHEM 3590	CHEM 4600
In Year 1 or Year 2 the following must be completed:  6 credit hours from the Faculty of Arts, which should include the required "W" course.  3 credit hours from Mathematics, Statistics or Computer Science courses <sup>3</sup>		Sufficient credit hours (18) from the 2000, 3000 and 4000 level Chemistry <sup>4</sup> courses not yet taken to total a minimum of 54 credit hours. These credit hours may make up part of a focus area.  9 credit hours of non-Chemistry courses which are part of a designated focus area <sup>4</sup> . (Note: If no Focus Area is selected, students must choose 9 credit hours of Chemistry courses.)	
		<b>Work Terms (if Co-op selected):</b>  CHEM 3980, CHEM 3990	<b>Work Terms (if Co-op selected):</b>  CHEM 4980 and/or CHEM 4990
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**



1. MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700; MATH 1690 may be taken in place of MATH 1500 and MATH 1700.
  2. PHYS 1020 may be used in place of PHYS 1050; and, in the 3-year degree only - PHYS 1030 may be used in place of PHYS 1070. Students planning on completing a 4-year degree in Chemistry are required to complete PHYS 1070.
  3. MATH 1010, MATH 1020, MATH 1190, MATH 1191, COMP 1260 and COMP 1270 may not be used to satisfy this requirement.
  4. Students may elect to complete the requirements set out in one of the Chemistry focus areas. If a student opts for one of the focus areas, they should consult with the Department of Chemistry and a Science Student Advisor for information regarding specific course requirements for each focus area.
  5. IMPORTANT: The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.
  6. Elective courses should be selected in consultation with the Department of Chemistry and/or a Faculty of Science Student Advisor.
- (Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

#### 4.5.4 Chemistry General Degree and Minor Requirements

<b>THREE YEAR B.Sc. General – Chemistry Focus 90 CREDIT HOURS</b>	
CHEM 1300, CHEM 1310 (C)	21 hours of required 2000 level Chemistry courses: CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2290, CHEM 2400 (CHEM 2380), CHEM 2470, CHEM 2360
BIOL 1020, BIOL 1030	15 credit hours of 2000 level or higher CHEM: Excluding the Chemistry service courses (2240, 2560, 2770, 2780), Co-op courses (3980, 3990, 4980, 4990) and specialized courses (4600, 4700, 4710). A minimum of 6 credit hours must be chosen from the 3000 / 4000 level.
MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>	6 credit hours of electives to be chosen from outside the Faculty of Science
PHYS 1050 <sup>2</sup> , PHYS 1070 <sup>2</sup>	18 credit hours of open electives
6 credit hours from the Faculty of Arts. (Should include the student's "W" requirement.)	
<b>THREE YEAR GENERAL 90 CREDIT HOURS</b>	
CHEM 1300, CHEM 1310 (C)	a minimum of 18 credit hours from the following list of advanced level courses: CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2290, CHEM 2360, CHEM 2370, CHEM 2400 (CHEM 2380), CHEM 2470, CHEM 3360, CHEM 3370, CHEM 3400 (CHEM 3380), CHEM 3390, CHEM 3570, CHEM 3580, CHEM 3590, CHEM 4360, CHEM 4370, CHEM 4570, CHEM 4580, CHEM 4590, CHEM 4620, CHEM 4630, CHEM 4640, CHEM 4660, CHEM 4670, CHEM 4680, CHEM 4690 (subject to the Faculty requirement that of the 36 credit hours in the two advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level).
<b>MINOR</b>	
CHEM 1300, CHEM 1310 (C)	Normally CHEM 2210 and CHEM 2220, plus an additional 6 credit hours of Chemistry

#### NOTES:

1. MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700; MATH 1690 may be taken in place of MATH 1500 and MATH 1700.
  2. PHYS 1020 may be used in place of PHYS 1050; and, in the 3-year degree only - PHYS 1030 may be used in place of PHYS 1070. Students planning on completing a 4-year degree in Chemistry are required to complete PHYS 1070.
  3. MATH 1010, MATH 1020, MATH 1190, MATH 1191, COMP 1260 and COMP 1270 may not be used to satisfy this requirement.
  4. Students may elect to complete the requirements set out in one of the Chemistry focus areas. If a student opts for one of the focus areas, they should consult with the Department of Chemistry and a Science Student Advisor for information regarding specific course requirements for each focus area.
  5. IMPORTANT: The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.
  6. Elective courses should be selected in consultation with the Department of Chemistry and/or a Faculty of Science Student Advisor.
- (Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

#### 4.5.5 Chemistry - Physics Joint Honours Program

<b>4.5.5 Chemistry - Physics Joint Honours Program</b>			
YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS<sup>2</sup> 120 CREDIT HOURS</b>			



CHEM 1300 (B), CHEM 1310 (B)  PHYS 1050 (B) (or PHYS 1020 (B+)), PHYS 1070 (B)  MATH 1500 <sup>1</sup> (B), MATH 1700 <sup>1</sup> (B)  6 credit hours from the Faculty of Arts, which should include the required "W" course  6 credit hours of electives	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2290, CHEM 2400 or CHEM 2470  PHYS 2390, PHYS 2380, PHYS 2490, PHYS 2600, PHYS 2650	12 credit hours from whichever of CHEM 2400 or 2470 not taken and any of CHEM 2860 (CHEM 2360 /MBIO 2360), CHEM 2370 (MBIO 2370) or 3000 / 4000 level Chemistry courses  PHYS 2260, PHYS 2610, PHYS 3380, PHYS 3630, PHYS 3670, PHYS 3680	CHEM 4600  CHEM 4710 (6) or both PHYS 4672 and PHYS 4674  PHYS 4390  6 credit hours of 3000 / 4000 level Physics courses  3 credit hours of 3000 / 4000 level Chemistry courses  9 credit hours of approved electives
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

1. MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700; MATH 1690 may be taken in place of MATH 1500 and MATH 1700.
  2. PHYS 1020 may be used in place of PHYS 1050; and, in the 3-year degree only - PHYS 1030 may be used in place of PHYS 1070. Students planning on completing a 4-year degree in Chemistry are required to complete PHYS 1070.
  3. MATH 1010, MATH 1020, MATH 1190, MATH 1191, COMP 1260 and COMP 1270 may not be used to satisfy this requirement.
  4. Students may elect to complete the requirements set out in one of the Chemistry focus areas. If a student opts for one of the focus areas, they should consult with the Department of Chemistry and a Science Student Advisor for information regarding specific course requirements for each focus area.
  5. IMPORTANT: The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.
  6. Elective courses should be selected in consultation with the Department of Chemistry and/or a Faculty of Science Student Advisor.
- (Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

#### 4.5.6 Chemistry -900 Level

**CHEM 0900** Preparatory Chemistry Cr.Hrs.0  
(Formerly 002.090) A course designed for students with little,

or no background in chemistry who wish to achieve the prerequisites for advanced courses, or for students who require a refresher course in basic chemistry. Concurrent registration in CHEM 0900 and any of CHEM 1300, CHEM 1301, CHEM 1311 or CHEM 1320 is not permitted. (Pass/Fail grade only.) Prerequisite or Concurrent Requirement: Any grade 12 or 40S Mathematics course or equivalent.

#### 4.5.6 Chemistry -1000 Level

**CHEM 1000** Understanding the World through Chemistry Cr.Hrs.3

(Formerly 002.100) This course introduces students to the principles of chemistry necessary for an understanding of contemporary issues in agriculture, the environment, industry, medicine, and the economy. High school chemistry is not required. May be used as a prerequisite (minimum grade "B") for CHEM 1300 or CHEM 1301 (Developmental section). Not to be held with CHEM 1001 or the former 002.125. May not be used to fulfill chemistry requirements in a Chemistry Honours, Major, General or Minor program. Not available to students who have previously obtained credit in, or are concurrently registered in, any 2000 level university

Chemistry course.

**CHEM 1030** Carbon Chemistry in Nature and Society Cr.Hrs.3

(Formerly 002.103) This course introduces organic molecules and illustrates the principles of organic chemistry with topics from cosmetics and personal care products, the petroleum industry, food preparation chemistry, polymers and plastics, poisons and biological toxins, and risk assessment. May not be used to fulfill chemistry requirements in a Chemistry Honours, Major, General or Minor program. Not available to students who have previously obtained credit in, or are concurrently registered in, any 2000 level university Chemistry course. Not to be held with CHEM 1031 or the former 002.125. Prerequisite: One of CHEM 1000, CHEM 1001 (002.100) (C), CHEM 1300, CHEM 1301 (002.130) (C), Chemistry 40S (or equivalent), or CHEM 0900 (002.090).

**CHEM 1300** University 1 Chemistry: Structure and Modelling in Chemistry Cr.Hrs.3

(Lab Required) (Formerly 002.130) Atomic and molecular models and their applications to chemistry, including a discussion of solid, liquid, and gaseous states, and of mixtures. Not to be held with CHEM 1301. Prerequisites: Applied Mathematics 40S or Pre-calculus Mathematics 40S, or the former Mathematics 40S (300); and Chemistry 40S (or equivalent) or CHEM 0900 (002.090) (P), or a minimum grade of "B" in CHEM 1000 or CHEM 1001 (002.100).



**CHEM 1310** University 1 Chemistry: An Introduction to Physical Chemistry Cr.Hrs.3  
(Lab Required) (Formerly 002.131) Thermochemistry, chemical thermodynamics, and chemical kinetics. Prerequisite: CHEM 1300 or CHEM 1301 (002.130) (C).

**CHEM 1320** University 1 Chemistry: An Introduction to Organic Chemistry Cr.Hrs.3  
(Lab Required) (Formerly 002.132) Structures, properties and reactions of organic molecules. Not to be held with CHEM 2210 or CHEM 2211 (002.221) Prerequisite: CHEM 1300 or CHEM 1301 (002.130) (C).

**CHEM 1804** UW CHEM-2801 Chemistry & Society (1000 Level) Cr.Hrs.3  
Campus Manitoba course.

#### 4.5.6 Chemistry -2000 Level

**CHEM 2210** Introductory Organic Chemistry 1: Structure and Function Cr.Hrs.3  
(Lab Required) (Formerly 002.221) An introduction to the concepts of organic reactivity and bonding in organic molecules. Preparation and properties of functionalized organic molecules. Not to be held with CHEM 1320 (002.132) or CHEM 2211. Prerequisite: CHEM 1310 or CHEM 1311 (002.131) (C).

**CHEM 2220** Introductory Organic Chemistry 2: Reactivity and Synthesis Cr.Hrs.3  
(Lab Required) (Formerly 002.222) An introduction to the reactivity of organic compounds and organic spectroscopy. The application of functional group interconversions to syntheses. Not to be held with CHEM 2221. Prerequisite: CHEM 2210 or CHEM 2211 (002.221) (C).

**CHEM 2240** Applied Chemistry for Engineers Cr.Hrs.3  
(Formerly 002.224) Bonding, surface chemistry, phase rule, electrochemistry, materials and descriptive inorganic chemistry of selected elements. Prerequisite: CHEM 1300 or CHEM 1301 (002.130) (C).

**CHEM 2280** Physical Chemistry: Microscopic Descriptions of Matter Cr.Hrs.3  
(Lab Required) (Formerly 002.228) Molecular based approach to understanding physical behaviour of matter. Introduction to principles of quantum mechanics, electronic structure and bonding, molecular spectroscopy. Not to be held with CHEM 2281. Prerequisites: CHEM 1310 or CHEM 1311(002.131) (C); PHYS 1030 or PHYS 1031 (016.103) (C) or PHYS 1070 or PHYS 1071 (016.107) (C); plus six credit hours of 1000 level mathematics (preferably calculus) with the exception of the former 136.100, MATH 1010 (136.101), MATH 1190, MATH 1191 (136.119), FA 1020 (054.102), or MATH 1020 (136.102).

**CHEM 2290** Chemical Energetics and Dynamics: Macroscopic Descriptions Cr.Hrs.3  
(Lab Required) (Formerly 002.229) Chemical energetics, entropy and the second law of thermodynamics, chemical dynamics. Not to be held with CHEM 2291. Prerequisites: CHEM 1310 or CHEM 1311 (002.131) (C); PHYS 1030 or PHYS 1031 (016.103) (C) or PHYS 1070 or PHYS 1071 (016.107) (C); plus six credit hours of 1000 level mathematics (preferably calculus) with the exception of the former 136.100, MATH 1010 (136.101), MATH 1190, MATH

1191 (136.119), MATH 1020 (136.102), or FA 1020 (054.102).

**CHEM 2360** Biochemistry 1: Biomolecules and an Introduction to Metabolic Energy Cr.Hrs.3  
(Lab Required) (Formerly 002.236) An introductory course dealing with kinds of molecules encountered in biochemistry, and the concept of metabolic energy as a product of catabolism and a requirement for biosynthesis. This course is also given in Microbiology as MBIO 2360. Not to be held with CHEM 2361, CHEM 2770 (002.277), MBIO 2360, MBIO 2361 (060.236), or MBIO 2770 (060.277). Prerequisites: CHEM 1310 or CHEM 1311 (002.131) (C); and one of BIOL 1030, BIOL 1031, or the former 071.125 (C). NOTE: Students may hold this course for credit in the B.Sc. General Degree program, but may not use it to fulfill the minimum requirement of 12 credit hours in 2000 level Chemistry (pre-September 2008 regulations). Those students following the new General Degree regulations (effective 2008-09) are able to use this course as part of the 18 credit hours of advanced level Chemistry or Microbiology.

**CHEM 2370** Biochemistry 2: Catabolism, Synthesis, and Information Pathways Cr.Hrs.3  
(Lab Required) (Formerly 002.237) An introductory course dealing with the basic metabolic processes that occur in living cells, including the production and use of metabolic energy, the breakdown and synthesis of biomolecules; the synthesis of DNA, RNA and proteins; and the regulation of these processes. This course is also given in Microbiology as MBIO 2370. Not to be held with CHEM 2371, CHEM 2780 (002.278), MBIO 2370, MBIO 2371 (060.237), or MBIO 2780 (060.278). Prerequisites: one of CHEM 2360, CHEM 2361 (002.236), MBIO 2360, or MBIO 2361 (060.236); and CHEM 2210 or CHEM 2211(002.221), both courses with a minimum grade of "C". NOTE: Students may hold this course for credit in the B.Sc. General Degree program, but may not use it to fulfill the minimum requirement of 12 credit hours in 2000 level Chemistry (pre-September 2008 regulations). Those students following the new General Degree regulations (effective 2008-09) are able to use this course as part of the 18 credit hours of advanced level Chemistry or Microbiology.

**CHEM 2400** Inorganic chemistry: Structure and Applications Cr.Hrs.3  
(Lab Required) Overview of chemical bonding, structure and reactivity across the Periodic Table, illustrated by examples linking Inorganic Chemistry with e.g. materials science and biochemistry. The lab component involves synthesis and analysis of simple inorganic compounds. Not to be held with CHEM 2380, CHEM 2381 or CHEM 2401. Prerequisite: CHEM 1310 or CHEM 1311 (C).

**CHEM 2470** Introductory Analytical Chemistry Cr.Hrs.3  
(Lab Required) (Formerly 002.247) A course in quantitative analysis provides training useful for nearly all scientists. It equips the students with the theoretical principles on which the analytical methods are based, with the ability to plan and perform experimental work, to interpret the results. Not to be held with CHEM 2471. Prerequisites: CHEM 1310 or CHEM 1311 (002.131) (C); and three credit hours of mathematics with the exception of the former 136.100, MATH 1010, MATH 1190, MATH 1191, MATH 1020, or FA 1020.

**CHEM 2550** Environmental Chemistry Cr.Hrs.3  
(Lab Required) (Formerly 002.255) An introduction to the chemistry of the environment. Emphasis will be on the



composition of the natural environment and the processes of natural and human-introduced chemical species that take place within it. The course will provide students with the chemical basis for understanding the environment and environmental problems. This course is also taught in Environmental Science as ENVR 2550. Prerequisite: CHEM 1310 or CHEM 1311 (002.131) (C).

**CHEM 2560** Water Quality Analysis for Engineers Cr.Hrs.3 (Lab Required) Principles and applications of chemical and instrumental methods for the analysis of water quality. This course is restricted to students in Civil Engineering.

**CHEM 2770** Elements of Biochemistry 1 Cr.Hrs.3 (Lab Required) (Formerly 002.277) Basic concepts of biochemistry including the properties of biomolecules (amino acids and proteins, enzymes, carbohydrates, lipids, and nucleic acids) and aspects of energy production in cells. For students in Agricultural and Food Sciences, Human Ecology, and Four Year Biological Sciences programs in Science. May not be used as part of an Honours, Major, General, or Minor program in Chemistry or in Microbiology. This course is also given in Microbiology as MBIO 2770. Not be held with CHEM 2360, CHEM 2361 (002.236), MBIO 2360, MBIO 2361 (060.236), CHEM 2860 (002.286), or MBIO 2770 (060.277). Prerequisites: one of CHEM 1310, CHEM 1311 (002.131) (C), or CHEM 1320 (002.132) (C); plus six credit hours of university level biological sciences.

**CHEM 2780** Elements of Biochemistry 2 Cr.Hrs.3 (Lab Required) (Formerly 002.278) The continuation of CHEM 2770 or MBIO 2770, dealing with nitrogen and lipid metabolism, representative biosynthetic pathways, and synthesis and importance of DNA, RNA and proteins. For students in Agricultural and Food Sciences, Human Ecology, and four-year Biological Science programs in Science. May not be used as part of an Honours, Major, General, or Minor program in Chemistry or Microbiology. This course is also given in Microbiology as MBIO 2780. Not to be held with CHEM 2370, CHEM 2371 (002.237), MBIO 2370, MBIO 2371 (060.237), MBIO 2780 (060.278) or the former courses 002.235, 002.240, 060.235, 060.240. Prerequisites: one of CHEM 2770 (002.277), MBIO 2770 (060.277) (C), CHEM 2360, CHEM 2361 (002.236), MBIO 2360, or MBIO 2361 (060.236) (C).

**CHEM 2860** Chemistry of Biomolecules Cr.Hrs.3 (Lab Required) (Formerly 002.286) The chemistry of molecules encountered in biochemistry, including their structures, reactions, and physical properties. The concept of metabolic energy in biochemistry. Not to be held with CHEM 2360, CHEM 2361 (002.236), CHEM 2770 (002.277), MBIO 2360, MBIO 2361 (060.236), MBIO 2770 (060.277), or the former courses 002.240 060.240, 002.235 or 060.235. Prerequisite: one of CHEM 1310, CHEM 1311 (002.131), or the former 002.128 with a minimum grade of "C". This course is available only to students registered in the Chemistry Honours or Four Year Major program.

#### 4.5.6 Chemistry -3000 Level

**CHEM 3360** Elementary Quantum Chemistry and Molecular Bonding Cr.Hrs.3 (Lab Required)(Formerly 002.336) Elementary quantum chemistry and its applications to structure and bonding in molecules and solids. Prerequisite: CHEM 2280 (002.228) or

CHEM 2281 or the former 002.230 (C).

**CHEM 3370** Symmetry, Spectroscopy and Structure Cr.Hrs.3 (Lab Required) (Formerly 002.337) Applications of symmetry in chemistry; molecular spectroscopy; structure of solids. Prerequisite: CHEM 2280 or CHEM 2281 (002.228) or the former 002.230 (C).

**CHEM 3390** Structural Transformations in Organic Chemistry Cr.Hrs.3 (Lab Required) (Formerly 002.339) An intermediate course dealing with the reactions of organic chemistry involving functional group transformations and carbon - carbon bond forming reactions. Prerequisite: one of CHEM 2220, CHEM 2221 (002.222), or the former 002.220 (C). CHEM 2290 or CHEM 2291(002.229) is recommended.

**CHEM 3400** Inorganic Chemistry: Reactivity and Properties Cr.Hrs.3 (Lab Required) Advanced chemistry of the elements with emphasis on chemical reactivity, electronic structure and physical properties of inorganic compounds. The laboratory focuses on the preparation, structure determination and spectroscopic characterization of inorganic compounds. This course may not be held for credit with CHEM 3380. Prerequisite: CHEM 2400 or CHEM 2380 (C).

**CHEM 3490** Introduction of Polymers Cr.Hrs.3 (Formerly 002.349) An introduction to the formation, structure, physical properties, and degradation of polymers. Prerequisites: one of CHEM 2220, CHEM 2221 (002.222) or the former 002.220 (C); and CHEM 2290 or CHEM 2291 (002.229), or the former 002.230 (C).

**CHEM 3570** Biophysical Chemistry Cr.Hrs.3 The application of physical chemistry to biological problems, with an emphasis on quantitative interpretation. Topics include enzyme kinetics, bioenergetics, transport processes and spectroscopy. Prerequisites: CHEM 2360 and MATH 1500 (or equivalent). CHEM 2280 is recommended.

**CHEM 3580** Methods in Physical Organic Chemistry Cr.Hrs.3 (Lab Required) (Formerly 002.358) A course dealing with the application of physical chemical principles to organic reaction mechanisms. Prerequisite: one of CHEM 2220, CHEM 2221 (002.222) or the former 002.220 (C). Prerequisite or concurrent registration: CHEM 2290 or CHEM 2291(002.229).

**CHEM 3590** Instrumental Analysis Cr.Hrs.3 (Lab Required) A course dealing with the theory and use of standard instruments used for chemical and biochemical analyses. An introduction to the interpretation of data obtained from such analyses. This course is designed to follow a classical analytical chemistry course. Not to be held with ENVR 3550 (128.355) or the former 002.347 or the former 002.355. Prerequisite: CHEM 2470 (002.247) (C).

**CHEM 3980** Work Term 1 Cr.Hrs.0 Work assignments in business, industry or government for students registered in the Chemistry Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only)

**CHEM 3990** Work Term 2 Cr.Hrs.0

Work assignments in business, industry or government for students registered in the Chemistry Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

**4.5.6 Chemistry -4000 Level****CHEM 4360** Signalling and Regulation of Gene Expression Cr.Hrs.3

(Formerly 002.436) The biochemistry of cell response to external stimuli, with emphasis on animals. Cell surface receptors and ligands; signalling to the nucleus; phosphorylation and proteolysis; transcription; gradients in cell patterning. Not to be held with CHEM 4361. Prerequisite: a "C" or better in one of CHEM 2370, CHEM 2371 (002.237), MBIO 2370, MBIO 2371(060.237), the former 002.235, or the former 060.235.

**CHEM 4370** Glycobiology and Protein Activation Cr.Hrs.3 (Formerly 002.437) The role of carbohydrate containing biomolecules in biochemistry and their importance for understanding some genetic diseases. The importance of limited proteolysis in activation of biomolecules. Not to be held with CHEM 4371 or the former 002.449. Prerequisite: a "C" or better in one of CHEM 2370, CHEM 2371 (002.237), MBIO 2370, MBIO 2371(060.237), the former 002.235, or the former 060.235.

**CHEM 4550** Aquatic Chemistry Cr.Hrs.3 (Formerly 002.455) An examination of biogeochemical processes affecting the distribution, speciation and bioavailability of chemical substances in the aquatic environment. The theoretical basis for the chemical behaviour of natural water systems is discussed, as well as the description of processes involved in wastewater treatment. This course is also taught in Environmental Science as ENVR 4550 (128.455). Prerequisite: A grade of "C" or better in one of CHEM 3590, the former 002.347, the former 002.355, or ENVR 3550 (128.355); or permission of the department.

**CHEM 4570** Topics in Inorganic Chemistry Cr.Hrs.3 (Formerly 002.457) A variety of topics from recent literature. This is an advanced 4000 level course. Registration requires departmental permission. This course may not be offered every year - check with department for availability.

**CHEM 4580** Topics in Organic Chemistry Cr.Hrs.3 (Formerly 002.458) Selected topics dealing with the structure and reactivity of organic compounds. This is an advanced 4000 level course. Registration requires departmental permission. This course may not be offered every year - check with department for availability.

**CHEM 4590** Bioanalytical Methods Cr.Hrs.3 (Lab Required) This course introduces different methods used currently for the analysis of biological materials. Qualitative and quantitative aspects are explored. Instrumentation is described and practical methods are designed. Not to be held with the former 002.347. Prerequisite: a grade of "C" or better in CHEM 3590, or ENVR 3550 (128.355), or the former 002.355.

**CHEM 4600** Advanced Chemical Techniques Cr.Hrs.3 (Lab required) (Formerly 002.460) A workshop course consisting of lectures, problem solving, and advanced instrumental techniques. The course is designed to train potential research students in techniques like NMR, mass spectroscopy, and chromatography. This course is required of all final year Honours students in Chemistry. Prerequisite: one of CHEM 3360 (002.336) (C), CHEM 3400 (C), CHEM 3380 (002.338) (C), CHEM 3390 (002.339) (C), or CHEM 3580 (002.358) (C).

**CHEM 4620** Biochemistry of Nucleic Acids Cr.Hrs.3 (Formerly 002.462) The structure of nucleic acids; synthesis and sequence determination; interaction with drugs and protein. Not to be held with CHEM 4621. Prerequisite: a "C" or better in one of CHEM 2370, CHEM 2371 (002.237), MBIO 2370, MBIO 2371 (060.237), the former 002.235, or the former 060.235.

**CHEM 4630** Biochemistry of Proteins Cr.Hrs.3 (Formerly 002.463) The structure and function of proteins, their physical and chemical properties and methods for studying them. Not to be held with CHEM 4631. Prerequisite: a "C" or better in one of CHEM 2370, CHEM 2371 (002.237), MBIO 2370, MBIO 2371 (060.237), the former 002.235, or the former 060.235.

**CHEM 4640** Spectroscopy, Relaxation and Structure Cr.Hrs.3 (Formerly 002.464) A course dealing with quantum mechanical manipulations and illustrations from magnetic resonance and other spectroscopies; relaxation and polarization phenomena. Prerequisite: CHEM 3370 (002.337) (C) or permission of the Instructor.

**CHEM 4650** Molecular States and Processes Cr.Hrs.3 (Formerly 002.465) A course dealing with various aspects of molecular states and processes including student selected topics. Prerequisite: CHEM 3370 (002.337) (C).

**CHEM 4660** Computational Chemistry Cr.Hrs.3 An overview of modern computational methods employed in the study of chemical systems, combining theoretical understanding with practical applications. Prerequisite: CHEM 3360

**CHEM 4670** Drug Design and Drug Discovery Cr.Hrs.3 An understanding of the design, synthesis and interactions of drug molecules. Emphasis will be on novel drug-like molecules in the early stages of drug discovery with special focus on brain diseases and infectious diseases. Prerequisites: CHEM 2220 (C); and one of CHEM 2360, CHEM 2361, MBIO 2360, MBIO 2361, 002.236, 060.236 (C) or CHEM 2860 (C).

**CHEM 4680** Organometallic Chemistry Cr.Hrs.3 (Formerly 002.468) Chemistry of organometallic compounds of the transition metals and representative elements. Prerequisite: CHEM 3400 (C), or CHEM 3380 (002.338) (C), or CHEM 3390 (002.339) (C).

**CHEM 4690** Specific Methods in Organic Synthesis Cr.Hrs.3 (Formerly 002.469) Advanced methods and principles of organic synthesis of complex molecules. Prerequisite: CHEM 3390 (002.339) (C).



**CHEM 4700** Advanced Biochemistry Laboratory Cr.Hrs.3 (Lab required) (Formerly 002.470) A laboratory and workshop consisting of lectures, problem solving, and advanced instrumental techniques such as magnetic resonance spectroscopy, mass spectrometry, circular dichroism, x-ray crystallography, fluorescence spectroscopy and computer analysis of protein sequences. This course is required for all final year Honours students in Biochemistry. Prerequisite or concurrent requirement: CHEM 4620 or CHEM 4621; and CHEM 4630 or CHEM 4631.

**CHEM 4710** Research Project in Chemistry or Biochemistry Cr.Hrs.6 (Lab required) (Formerly 002.471) A research project in any aspect of chemistry or biochemistry, chosen in consultation with the course administrator and an appropriate supervising faculty member. Written reports and oral presentation at the end of the project will be required. The course is normally available only to final year students in chemistry programs. Not to be held with CHEM 4711 or MBI0 4530 (060.453). Prerequisite: Permission of the course administrator.

**CHEM 4800** Topics in Physical/Theoretical Chemistry Cr.Hrs.3  
Selected topics related to physical chemistry properties of matter, their measurement, and computational methods for studying them. This is an advanced 4000 level course, registration only by Departmental permission. This course may not be offered every year - check with department for availability.

**CHEM 4802** Topics in Analytical Chemistry Cr.Hrs.3  
Selected topics on the most recent and sensitive techniques described in the literature in the Analytical, Bioanalytical and Environmental areas. A selection of topics among separation, surface, ionization, spectroscopy, voltammetry and spectrometry techniques will be covered. This is an advanced 4000 level course, registration only by Department permission. This course may not be offered every year - check with department for availability.

**CHEM 4804** Topics in Biochemistry Cr.Hrs.3  
Selected advanced topics relevant to the study of biomolecules. This is an advanced 4000 level course, registration only by Departmental permission. This course may not be offered every year - check with department for availability.

**CHEM 4980** Work Term 3 Cr.Hrs.0  
Work assignments in business, industry or government for students registered in the Chemistry Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

**CHEM 4990** Work Term 4 Cr.Hrs.0  
Work assignments in business, industry or government for students registered in the Chemistry Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

## 4.6 Department of Computer Science

**Head:** John Anderson

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### 4.6.1 Program Information

Computer technology continues to advance and computer applications are found in all fields and disciplines. As new applications proliferate, opportunities for careers in computing will continue to be strong. Both the Major and the Honours programs offer a co-op option so students may combine education with employment experience.

The department must approve a student's Honour or Major program prior to registration for each Fall/Winter Term. Students must also obtain departmental approval for any and all revisions to their program.

The Computer Science Honours and Major programs, including the Coop programs, and the Software Engineering area of specialization, are accredited by the Computer Science Accreditation Council.

### Honours

The Honours program in Computer Science at the University of Manitoba was the first Honours program in Canada to be given professional accreditation by the Canadian Information Processing Society. The program provides an opportunity to study the subject in greater depth than the other programs in Computer Science and leads to an Honours Bachelor of Computer Science degree (B.C.Sc.). In addition, this program gives professional preparation for careers in areas such as software engineering, system design or project management.

An outline of the Honours program is provided below. MATH 1700 or equivalent is strongly recommended as an option. Optional courses are selected in consultation with the department advisor.

**To enter** the Honours program in Computer Science, a student must have completed at least 24 credit hours with a minimum GPA of 3.00, and also obtained a minimum grade of "B" in COMP 1020. Students are strongly encouraged to complete MATH 1300 and MATH 1500 (or equivalents) with at least a "C" average prior to entering the Computer Science Honours program. Failure to complete these first year Mathematics requirements will result in the inability to register for certain 2000 level required courses.

**To continue** in the Computer Science Honours program, students must maintain a minimum GPA of 3.00 and complete a minimum of 9 credit hours during each Fall and Winter Term.

**To graduate** from the Computer Science Honours program students must achieve a minimum GPA of 3.00 and obtain a minimum grade of "C" on the courses that make up the 120 credit hours of the degree.



Students can take a maximum of 90 credit hours of computer science, statistics and mathematics courses. Outside of computer science and mathematics courses, students are encouraged to select courses such that their pro-grams include at least 15 credit hours of study in science, engineering, or business, and at least 9 credit hours of study in the humanities or social sciences.

### Honours Cooperative Option

The first class of students graduated from the Cooperative program in October 1983. This program provides students with a total of 12 months of paid employment by the time they graduate. It enables them to obtain work experience with participating firms in Winnipeg as well as other parts of Canada. For example, students have, in the past, found employment in Calgary, Edmonton, Toronto, Vancouver and Ottawa, and they have found the program an invaluable preparation for their working lives.

Students interested in alternating employment terms and academic terms as part of their Honours Computer Science program may apply to enter the Cooperative Option in their second year in Honours Computer Science. The course and grade requirements **for entry** to this option are the same as those required for entry to the regular Honours program, as indicated in the chart below.

Students should refer to the general faculty regulations for Cooperative Options in Section 3.6, especially for information on performance requirements.

Students should note that the course and grade requirements for the Cooperative Option are the same as that of the regular Honours program. **REMINDER:** Students must complete at least nine (9) credit hours per each Fall and Winter Term (or equivalent for cooperative students) to remain in the Honours program.

**To graduate** with the Honours degree, a student must present a minimum grade of "C" in each course which contributes to the degree and a GPA of 3.00.

Students can take a maximum of 90 credit hours of computer science, statistics and mathematics courses. Outside of computer science and mathematics courses, students are encouraged to select courses such that their pro-grammes include at least 15 credit hours of study in science, engineering, or business, and at least nine (9) credit hours of study in the humanities or social sciences.

Students in this program will normally graduate following the completion of the Year 4 academic requirements in December, will receive their degree in February, and will be eligible to attend the May Convocation.

Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students will apply for openings in the Cooperative Option in April of their second year in the Honours program. They will be notified of their provisional acceptance in the program in September.

Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

The employment terms will be designed to provide students with the opportunity to acquire practical experience in a computer installation site and to acquire insight into areas of specialization within the computing field. Students can also typically earn enough to defray the cost of their university education.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each of their three employment terms.

### Four Year Major

**To enter** the Major Degree program in Computer Science, a student must have completed at least 24 credit hours with a minimum GPA of 2.00, and also obtained a minimum grade of "C+" in COMP 1020. Students are strongly encouraged to complete MATH 1300 and MATH 1500 (or equivalents) with at least a "C" average prior to entering the Computer Science Honours program. Failure to complete these first year Mathematics requirements will result in the inability to register for certain 2000 level required courses.

**To continue** in the Major program a student must maintain a minimum GPA of 2.00.

**To graduate** with the Computer Science Major degree, a student must present a minimum grade of "C" in: STAT 1000, COMP 2080, COMP 2130, COMP 2140, COMP 2150, COMP 2160, COMP 2280, COMP 3350, COMP 3370, COMP 3430 and in each of the 21 credit hours of 3000 and 4000 level Computer Science courses that apply to the Computer Science component of their degree program. Additionally, students must achieve a minimum GPA of 2.00 on the courses that contribute to the 120 credit hours of the degree.

This program is suitable for those students interested in combining a fairly extensive program in Computer Science with broad coverage of another subject or subjects of their choice (Science or non-Science). The program offers greater scheduling flexibility, more relaxed entrance requirements, and a wider range for the inclusion of electives from other disciplines than the Honours program, but it is not considered to offer the same professional training as the Honours program. Admission to graduate programs may be conditional upon completion of additional courses. Students intending to proceed to a master's degree from the four year Major program must consult with the department at the beginning of their second year of undergraduate study and in each subsequent year.

The student will be able to transfer to the Honours program at the end of the second year, provided that departmental



and faculty requirements for the Honours program at that stage are satisfied.

Students, who at the end of Year 1 are undecided between the four year Major program and the Honours program, should note that the required courses in Year 2 Honours satisfy the requirements for both the Honours and Major programs. It is suggested that students with the necessary prerequisite standing in Year 1 may wish to register in the courses listed for Year 2 of the Honours program, and thus keep both options open.

Students can take a maximum of 90 credit hours of computer science, statistics and mathematics courses. Outside of computer science and mathematics courses, students are encouraged to select courses such that their programmes include at least 15 credit hours of study in science, engineering, or business, and at least nine (9) credit hours of study in the humanities or social sciences. Students may be allowed to take up to 48 credit hours of courses outside the Faculty of Science with departmental permission, despite the faculty maximum of 36 credit hours. The permission would typically be granted if a student is completing a minor outside of Science and may have completed a variety of electives outside the Faculty prior to declaring a minor in one department.

#### Four Year Major Cooperative Option

**To continue** in the Major program a student must maintain a minimum GPA of 2.00.

**To graduate** with the Major degree, a student must present a minimum grade of "C" in: STAT 1000, COMP 2080, COMP 2130, COMP 2140, COMP 2150, COMP 2160, COMP 2280, COMP 3350, COMP 3370, COMP 3430 and in each of the 21 credit hours of 3000 and 4000 level Computer Science courses that apply to the Computer Science component of their degree program. Students must also obtain a minimum GPA of 2.00 on the 120 credit hours that contribute to the degree.

Students can take a maximum of 90 credit hours of computer science, statistics and mathematics courses. Outside of computer science and mathematics courses, students are encouraged to select courses such that their programmes include at least 15 credit hours of study in science, engineering, or business, and at least 9 credit hours of study in the humanities or social sciences. Students may be allowed to take up to 48 credit hours of courses outside the Faculty of Science with departmental permission, despite the faculty maximum of 36 credit hours. The permission would typically be granted if a student is completing a minor outside of Science and may have completed a variety of electives outside the Faculty prior to declaring a minor in one department.

This program provides students with a minimum of 12 months of paid employment by the time they graduate. It enables them to obtain work experience with participating firms in Winnipeg as well as other parts of Canada.

Students interested in alternating employment terms and academic terms as part of their four year Major program in Computer Science may apply to enter the Cooperative Option in their third year of the four year Major program in Computer Science. The course and grade requirements for entry to this option are the same as those required for entry to the regular four year Major program, as indicated in the chart above. Students should refer to the general faculty regulations for Cooperative Options in Section 3.4.

Students should note that the course and grade requirements for the Cooperative Option are the same as that for the regular Major program. Students in this program will normally graduate following the completion of the Year 4 academic requirements in December, will receive their degree in February, and will be eligible to attend the May Convocation.

Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students will apply for openings in the Cooperative Option in April of their second year in the Major program. They will be notified of their provisional acceptance in the program in September. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

The employment terms will be designed to provide students with the opportunity to acquire practical experience and insight into areas of specialization within the computing field. Students can also typically earn enough to defray the cost of their university education.

Students are required to register in, and pay fees for, each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each of their three employment terms.

#### Three Year General

As prescribed with all other faculty regulations in Section 3.2, students in this program must select 18 credit hours of 2000, 3000, and (or) 4000 level courses from each of **two** Science areas. To satisfy the requirement in the area of Computer Science, students must select a minimum of 18 credit hours from the 2000, 3000, and (or) 4000 level courses offered by the department (subject to the Faculty requirement that of the 36 credit hours in the two advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level.).



<p><b>Area Specializations</b></p> <p>Students who obtain a grade of “C” or better in the courses listed for an area of specialization will receive a notation on their transcript stating that they have met the requirements of that specialization. Students may obtain such a notation for more than one area.</p> <p><b>Theoretical Computer Science</b></p> <p>Requires: COMP 3170, COMP 3030, and COMP 4420; and two of COMP 4340, 4140, and/or COMP 4510.</p> <p><b>Networks and Security</b></p> <p>Requires: COMP 3720, COMP 4140, COMP 4580, and COMP 4720.</p> <p><b>Artificial Intelligence</b></p> <p>Requires: COMP 3190; and two of COMP 4180, COMP 4190, COMP 4200, and/or COMP 4360.</p>	<p><b>Human-Computer Interaction and Computer Graphics</b></p> <p>Requires: COMP 3020, and COMP 3490; one of COMP 4020 or COMP 4490.</p> <p><b>Databases</b></p> <p>Requires: COMP 3380 and COMP 4380; and one of COMP 4710 or COMP 4740.</p> <p><b>Software Engineering</b></p> <p>Requires: COMP 3010, COMP 3020, COMP 3040, COMP 3380, COMP 3620, COMP 4050, and COMP 4350.</p> <p><b>Computer Systems</b></p> <p>Requires: One of COMP 3010, or COMP 3290; and two of COMP 4430, COMP 4550, COMP 4510, and/or COMP 4690.</p>
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**4.6.2 Computer Science Program Charts**

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS<sup>3,4,6</sup> (Including Cooperative Option if selected)<sup>3</sup> 120 CREDIT HOURS</b>			
COMP 1010, COMP 1020 (B)	COMP 2080, COMP 2130 <sup>1</sup> , COMP 2140, COMP 2150, COMP 2160, COMP 2280	COMP 3030, COMP 3170, COMP 3350, COMP 3370, COMP 3430	21 credit hours of 4000 level Computer Science courses
MATH 1300 <sup>1</sup> and MATH 1500 <sup>1</sup>		3 credit hours of 3000 level Computer Science courses	
In Year 1 and / or Year 2 the following must be completed:		21 credit hours of approved electives <sup>2,4,6</sup>	
STAT 1000 (C)		<b>Work Terms (if Co-op Selected):</b>	
6 credit hours from the Faculty of Arts, which should include the required 3 credit hour “W” course.		COMP 2980, COMP 3980, COMP 4980 must be completed prior to the last academic term	
21 credit hours of approved elective courses <sup>2,4,6</sup>			
30 Hours	30 Hours	30 Hours	30 Hours
<b>FOUR YEAR MAJOR<sup>3,4,5,6</sup> (Including Cooperative Option if Selected)<sup>3</sup> 120 CREDIT HOURS</b>			
COMP 1010, COMP 1020 (C+)	COMP 2080, COMP 2130 <sup>1</sup> , COMP 2140, COMP 2150, COMP 2160, COMP 2280	COMP 3350, COMP 3370, COMP 3430	
MATH 1300 <sup>1</sup> and MATH 1500 <sup>1</sup>		21 credit hours of 3000 or 4000 level Computer Science courses of which 6 credit hours must be at the 4000 level	
In Year 1 or Year 2 the following must be completed:		30 credit hours of approved electives <sup>4,6</sup>	
STAT 1000 (C)		<b>Work Terms (if Co-op Selected):</b>	
6 credit hours from the Faculty of Arts, which should include the required 3 credit hour “W” course.		COMP 2980, COMP 3980, COMP 4980 must be completed prior to the last academic term	
21 credit hours of approved electives <sup>4,6</sup>			



<b>THREE YEAR GENERAL (90 CREDIT HOURS)</b>	
COMP 1010, COMP 1020	18 credit hours of 2000, 3000, and (or) 4000 level Computer Science courses (subject to the Faculty requirement that of the 36 credit hours to in the two advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level.)
<b>MINOR</b>	
COMP 1010, COMP 1020	COMP 2140  Plus a minimum of 9 credit hours from 2000 and (or) 3000 level Computer Science courses.
<b>NOTES:</b>	
1 MATH 1210 or MATH 1310 may be taken in place of MATH 1300; MATH 1510, MATH 1520, or MATH 1690 (6) may be taken in place of MATH 1500. A "C" average is required in the 6 credit hours of Mathematics used as prerequisite to COMP 2130.	
2 It is recommended that STAT 2000 be taken as an elective.	
3 Entry to the Honours Cooperative Option and four year Major Cooperative Option is at the end of second year. Employment terms follow 3A (September-December), 3B (May-August) and 4A (January-April). Students in the Cooperative Option must complete three employment terms and receive a passing grade in COMP 2980, COMP 3980 and COMP 4980 prior to the last academic term.	
4 Additional information on how students may select their courses can be found at the beginning of this section.	
5 <b>IMPORTANT:</b> The four year Major need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program. Students in the Cooperative Option should be aware that while other arrangements are possible, they may jeopardize their chances of obtaining employment by selecting such arrangements. Students should discuss their planned sequence of courses with the department prior to making adjustments to the sequence above.	
6 <b>IMPORTANT:</b> a maximum of 90 credit hours of computer science, statistics and mathematics courses can be included in a Major or Honours program.	

**4.6.3 Computer Science - Mathematics Joint Honours Program (Including Co-op if selected)**

The departments of Computer Science and Mathematics offer a joint Honours program for in-depth study in both Computer Science and Mathematics.

**Honours Requirements**

**To enter** the Joint Honours Computer Science-Mathematics program, the student must have a minimum grade of "B" in each of COMP 1020, MATH 1300 and MATH 1700 (or any equivalent), and have satisfied the Faculty of Science requirements for entry to the honours program. It is recommended that STAT 2000 be completed in University 1 as an elective.

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS (Including Cooperative Option if selected) 120 CREDIT HOURS</b>			
COMP 1010 and COMP 1020 (B)	COMP 2080 <sup>3</sup> , COMP 2140, COMP 2160, COMP 2280	COMP 3030, COMP 3170, COMP 3370, COMP 3430, COMP 4310 (or COMP 4420)	
MATH 1300 <sup>1</sup> (B), MATH 1690 (6) (B) (or MATH 1500 <sup>1</sup> and MATH 1700 <sup>1</sup> (B))	MATH 2202, MATH 2352 (6), MATH 2750 (6)	Three of: COMP 3020, COMP 3290, COMP 3350, COMP 3380, COMP 3720	
STAT 1000 (C)	one of: MATH 2600 or MATH 2800	Two of: COMP 4020, COMP 4050, COMP 4290, COMP 4350, COMP 4380, COMP 4720	
6 credit hours from the Faculty of Arts, which should include the required 3 credit hour "W" course <sup>2</sup>		MATH 3740 (6) or MATH 3760 (6); and MATH 3350 (or MATH 3300 and MATH 3310) (6); and MATH 3400; and which ever of MATH 2600 or MATH 2800 not yet taken	
6 credit hours of electives		12 credit hours of 3000 or 4000 level Mathematics courses, of which at least 3 credit hours must be 4000 level	
	Work Term (if Co-op Selected) <sup>4</sup> :	Work Term (if Co-op Selected) <sup>4</sup> :	Work Term (if Co-op Selected) <sup>4</sup> :
	COMP 2980	COMP 3980	COMP 4980
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

1 MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300; MATH 1710 may be taken in place of MATH 1700.



2 As there are no electives in Year 2 of the program, students should complete the written English requirement in University 1. If not completed in University 1, a "W" course must be completed prior to Year 3 in addition to the required Year 2 courses.  
3 Students in this program will not take COMP 2130 or COMP 3130. COMP 2130 is waived as a prerequisite for students in this program.  
4 When chosen, the Cooperative Option work terms (2980, 3980, 4980) will normally be completed during the Summer Terms following years 2, 3, and 4 respectively. (Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

#### 4.6.4 Computer Science – Physics & Astronomy Joint Honours Program

The departments of Computer Science and Physics & Astronomy offer a joint Honours program for in-depth study in both Computer Science and Physics & Astronomy.

**To enter** the Joint Honours Computer Science-Physics program, the student must have a minimum grade of "B" in each of PHYS 1050 (or "B+" in PHYS 1020), PHYS 1070, MATH 1300, MATH 1500, MATH 1700 (or any equivalent), COMP 1010 and COMP 1020. Students must complete a minimum of 9 credit hours per term in each Fall and Winter term.

**To graduate** with the Honours degree, a student must obtain a minimum GPA of 3.00 and present a minimum grade of "C" in each course that contributes to the degree

The department must approve a student's Honour or Major program each session. Students must also obtain departmental approval for any and all revisions to their program.

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS (Including Cooperative Option if selected) 120 CREDIT HOURS</b>			
PHYS 1050 (B) (or PHYS 1020 (B+)) and PHYS 1070 <sup>1</sup> (B)  COMP 1010, COMP 1020 (B)  MATH 1300 <sup>2</sup> (B), MATH 1500 <sup>2</sup> (B), MATH 1700 <sup>2</sup> (B)  6 credit hours from the Faculty of Arts, which must include the required 3 credit hour "W" course <sup>3</sup>  3 credit hours of electives	PHYS 2260, PHYS 2380, PHYS 2390, PHYS 2490, PHYS 2650  COMP 2080, COMP 2130, COMP 2140, COMP 2160, COMP 2280  Work Term (if Co-op Selected): COMP 2980 <sup>4</sup>	PHYS 2600, PHYS 2610, PHYS 3380, PHYS 3670, PHYS 3680  COMP 2190, COMP 3170, COMP 3430  6 credit hours of 3000 and / or 4000 level Computer Science courses  Work Term (if Co-op Selected): COMP 3980 <sup>4</sup>	15 credit hours of 3000 and 4000 level Honours Physics courses, with at least 6 credit hours at the 4000 level  12 credit hours of 3000 or 4000 level courses from Computer Science, with at least 9 credit hours at the 4000 level by the end of Year 4  3 credit hours of approved electives  Work Term (if Co-op Selected): COMP 4980 <sup>4</sup>
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

1 PHYS 1030 is not suitable for entry to the Honours or the four year Major program. Students must also take PHYS 1070 if they have already taken PHYS 1030. Students can hold credit for both PHYS 1030 and PHYS 1070.  
2 MATH 1310 may be taken in place of MATH 1300; MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700; MATH 1690 may be taken in place of MATH 1500 and MATH 1700.  
3 As there are no electives in Year 2 of the program, students should complete the University written English requirement in Year 1. If not completed in Year 1, a "W" course must be completed prior to Year 3 in addition to the required Year 2 courses.  
4 When chosen, the Cooperative Option work terms (2980, 3980, 4980) will normally be completed during the Summer Terms following years 2, 3, and 4 respectively.

#### 4.6.5 Computer Science – Statistics Joint Honours Program

The departments of Computer Science and Statistics offer a joint Honours program for in-depth study in both Computer Science and Statistics.

**To enter** the Joint Honours Computer Science-Statistics Program, the student must have a "B" or better in COMP 1020 and in STAT 2400 and a "C+" or better in MATH 1300, MATH 1500 and MATH 1700 or any equivalent courses.



To graduate with the Honours degree a student must present a minimum grade of "C" in each course that contributes to the degree. In addition, the student must achieve a minimum DGPA of 3.00 and a minimum grad of "C+" in each of the program specific courses in Statistics.

Both departments must approve a student's Honours program each session. Students must also obtain approval from both departments for any and all revisions to the program.

4.6.5 Computer Science – Statistics Joint Honours Program			
YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS<sup>2</sup> 120 credit hours (comprising courses listed in chart below, and electives)</b>			
MATH 1300 <sup>1</sup> (C+), MATH 1500 <sup>1</sup> (C+),  MATH 1700 <sup>1</sup> (C+)  COMP 1010, COMP 1020 (B)  STAT 1000, STAT 2000 (B)  Plus 6 credit hours from the Faculty of Arts, which must include the required 3 credit hour "W" course plus 3 credit hours of electives.	COMP 2080, COMP 2130, COMP 2140, COMP 2150, COMP 2160, COMP 2190,  STAT 2400  MATH 2300, MATH 2720, MATH 2730	COMP 3170, COMP 3380  STAT 3050, STAT 3400, STAT 3470, STAT 3480, STAT 3800  9 credit hours of electives <sup>4</sup> including 3 credit hours from 3 <sup>rd</sup> year COMP	STAT 4100, STAT 4520, STAT 4530  21 credit hours of electives including 6 credit hours from 4 <sup>th</sup> year COMP <sup>3</sup> , 3 credit hours from 3 <sup>rd</sup> year COMP and 6 credit hours from 4 <sup>th</sup> year STAT courses
30 Hours	30 Hours	30 Hours	30 Hours
<b>JOINT HONOURS COOPERATIVE OPTION<sup>2</sup> 120 CREDIT HOURS (comprising courses listed in chart below, and electives)</b>			
MATH 1300 <sup>1</sup> (C+), MATH 1500 <sup>1</sup> (C+), MATH 1700 <sup>1</sup> (C+)  COMP 1010, COMP 1020(B)  STAT 1000, STAT 2000 (B)  Plus 6 credit hours from the Faculty of Arts, which must include the required 3 credit hour "W" course plus 3 credit hours of electives.	COMP 2080, COMP 2130, COMP 2140, COMP 2150, COMP 2160, COMP 2190,  STAT 2400,  MATH 2300, MATH 2720, MATH 2730	COMP 3170, COMP 3380  STAT 3050, STAT 3400, STAT 3470, STAT 3480, STAT 3800  9 credit hours of electives <sup>4</sup> including 3 credit hours from 3 <sup>rd</sup> year COMP	STAT 4100, STAT 4520, STAT 4530  21 credit hours of electives including 6 credit hours from 4 <sup>th</sup> year COMP <sup>3</sup> , 3 credit hours from 3 <sup>rd</sup> year COMP and 6 credit hours from 4 <sup>th</sup> year STAT courses.
30 Hours	30 Hours	30 Hours	30 Hours
<b>NOTES:</b>			
<sup>1</sup> MATH 1310 may be taken in place of MATH 1300; math 1510, MATH 1520 may be taken in place of MATH 1500. MATH 1690 may be taken in place of the combination of MATH 1500 and MATH 1700. MATH 1710 may be taken in place of MATH 1700.			
<sup>2</sup> The courses required in this program will satisfy the university mathematics requirement.			
<sup>3</sup> COMP 4710 and COMP 4380 are suggested if offered.			
<sup>4</sup> The following courses are suggested: COMP 3350, COMP 3020, COMP 3490, MBIO 2410, STAT 3490, STAT 4630, STAT 4690.			
<sup>5</sup> The work terms COMP 2980, COMP 3980 and COMP 4980 will be completed in the summers following Year 2, Year 3 and Year 4, respectively and must be completed by the last academic term.			

#### 4.6.6 Computer Science -1000 Level

**COMP 1010** Introductory Computer Science 1 Cr.Hrs.3 (Lab Required) (Formerly 074.101) An introduction to computer programming using a procedural high level language. Not to be held with COMP 1011 or COMP 1012. Prerequisite: any grade 12 or 40S Mathematics, or equivalent.

**COMP 1012** Computer Programming for Scientists and Engineers Cr.Hrs.3 (Lab Required) An introduction to computer programming suitable for solving problems in science and engineering. Students will implement algorithms for numerical processing,

statistical analysis and matrix operations. Not to be held with COMP 1010. Prerequisite: Mathematics 40S or equivalent. Co-requisite: MATH1500 (or equivalent).

**COMP 1020** Introductory Computer Science 2 Cr.Hrs.3 (Lab Required) (Formerly 074.102) More features of a procedural language, elements of programming. Not to be held with COMP 1021. Prerequisite: COMP 1010 or COMP 1011 (074.101) (C); or COMP 1012 (C) or High School Computer Science 40S (75%) and any grade 12 or 40S Mathematics, or equivalent.

**COMP 1260** Introductory Computer Usage 1 Cr.Hrs.3 (Formerly 074.126) This course offers an introduction to modern computer services. Areas covered will include word



processing, spreadsheets, data management systems and graphics. No prior computer knowledge is necessary. May not hold with COMP 1261. May not be taken within the Computer Science Honours or Major program.

**COMP 1270** Introductory Computer Usage 2 Cr.Hrs.3 (Formerly 074.127) Using advanced tools to design web pages. Students will also learn how to make effective presentations, work in other operating system environments, use file transfer tools, apply simple script programming to web page designs, and understand current issues relating to technology in society. May not hold with COMP 1271. May not be taken within the Computer Science Honours or Major program. Recommended Prerequisite: COMP 1260, COMP 1261 (074.126) or equivalent knowledge is strongly recommended.

#### 4.6.6 Computer Science -2000 Level

**COMP 2080** Analysis of Algorithms Cr.Hrs.3 (Formerly 074.208) Methods of analyzing the time and space requirements of algorithms. Average case and worst case analysis. Models of computation. Prerequisites: COMP 2130 (074.213) (C); and one of COMP 2140 (074.214), the former 074.206, or COMP 2061 (C). STAT 1000 or STAT 1001 is strongly recommended.

**COMP 2130** Discrete Mathematics for Computer Science Cr.Hrs.3 (Formerly 074.213) An introduction to the set theory, logic, integers, combinatorics and functions for today's computer scientists. Prerequisites: COMP 1020 or COMP 1021 (C), and a "C" average in one of: MATH 1210, MATH 1300, MATH 1301 (136.130), MATH 1310 (136.131); and one of: MATH 1500, MATH 1501(136.150), MATH 1510 (136.151), MATH 1520 (136.152), the former 136.153, or MATH 1690 (136.169).

**COMP 2140** Data Structures and Algorithms Cr.Hrs.3 (Lab Required) (Formerly 074.214) Introduction to the representation and manipulation of data structures. Topics will include lists, stacks, queues, trees, and graphs. Not to be held with COMP 2061 or 074.206. Prerequisites: one of COMP 1020, COMP 1021 (074.102), or the former 074.123 (C).

**COMP 2150** Object Orientation Cr.Hrs.3 (Formerly 074.215) Design and development of object-oriented software. Topics will include inheritance, polymorphism, data abstraction and encapsulation. Examples will be drawn from several programming languages. Not to be held with the former 074.215 or 074.227. Prerequisite: COMP 2160 (074.216); and one of COMP 2140 (074.214), the former 074.206, or COMP 2061(C).

**COMP 2160** Programming Practices Cr.Hrs.3 (Lab Required) (Formerly 074.216) Introduction to issues involved in real-world computing. Topics will include memory management, debugging, compilation, performance, and good programming practices. Not to be held with the former 074.225. Prerequisite: COMP 1020 or COMP 1021 (074.102) (C).

**COMP 2190** Introduction to Scientific Computing Cr.Hrs.3 (Formerly 074.219) An applied computational course

introducing topics such as approximation by polynomials, solution of non-linear equations, linear systems, simulation and computational geometry. May not hold with COMP 2191. Prerequisites: One of COMP 1020 or COMP 1021 (074.102), or COMP 1012 (C); and one of MATH 1500, MATH 1501 (136.150) (C), MATH 1510 (136.151) (C), MATH 1520 (136.152) (C), the former 136.153 (C), or MATH 1690 (136.169) (C). Prerequisite or concurrent registration: One of MATH 1300, MATH 1301, or MATH 1310.

**COMP 2280** Introduction to Computer Systems Cr.Hrs.3 (Lab Required) (Formerly 074.228) Data representation and manipulation, machine-level representation of programs, assembly language programming, and basic computer architecture. Not to be held with the former 074.222 or 074.240; also not available to students who have previously completed ECE 3610. Prerequisites: COMP 2140 (074.214) (C), COMP 2160 (074.216) (C), and COMP 2130 (074.213) (C).

**COMP 2980** Workterm 1 Cr.Hrs.0 (Formerly 074.298) Work assignment in business, industry, or government for students registered in the Computer Science Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail)

#### 4.6.6 Computer Science -3000 Level

**COMP 3010** Distributed Computing Cr.Hrs.3 (Formerly 074.301) Introduction to distributed computing. Topics include task models, server-side computing, database connectivity, information sharing. Prerequisite: one of COMP 2140 (074.214), the former 074.206, or COMP 2061(C); and COMP 2150 (074.215).

**COMP 3020** Human-Computer Interaction 1 Cr.Hrs.3 (Formerly 074.302) Human-computer interaction: human factors and usability, user-centered design, prototyping, usability evaluation. Not to be held with the former 074.371. Prerequisite: one of COMP 2140 (074.214), the former 074.206, or COMP 2061 (C). A course in cognitive psychology, such as PSYC 2480 (017.248), is recommended.

**COMP 3030** Automata Theory and Formal Languages Cr.Hrs.3 (Formerly 074.303) An introduction to automata theory, grammars, formal languages and their applications. Topics: finite automata, regular expressions and their properties; context-free grammars, pushdown automata and properties of context-free languages; turing machines. Applications: lexical analysis, text editing, machine design, syntax analysis, parser generation. Prerequisites: one of COMP 2140 (074.214), the former 074.206, or COMP 2061(C); and COMP 2080 (074.208) (C).

**COMP 3040** Technical Communication in Computer Science Cr.Hrs.3 (Formerly 074.304) This course is designed to help students become more effective and confident writers in the context of the computing profession. Students will be introduced to a broad range of written and oral presentation styles used in the computing workplace. Prerequisite: Students must be enrolled in third year (or higher) of a majors or honours



programme in the Department of Computer Science.

**COMP 3090** Digital Logic 2 Cr.Hrs.3

(Formerly 074.309) Design and implementation of digital circuits. Minimization and state reduction, asynchronous circuits, arithmetic circuits, implementation using modern hardware techniques. Not to be held with ECE 2200, or the former 074.342, 074.447 or 024.422. Prerequisite: COMP 2280 (074.228) (C); or both of the former 074.222 and 074.223(C).

**COMP 3170** Analysis of Algorithms and Data Structures Cr.Hrs.3

(Formerly 074.317) Fundamental algorithms for sorting, searching, storage management, graphs, databases and computational geometry. Correctness and analysis of those algorithms using specific data structures. An introduction to lower bounds and intractability. Prerequisites: one of COMP 2140 (074.214), the former 074.206, or COMP 2061(C); and COMP 2080 (074.208) (C).

**COMP 3190** Introduction to Artificial Intelligence Cr.Hrs.3

(Formerly 074.319) Principles of artificial intelligence: problem solving, knowledge representation and manipulation; the application of these principles to the solution of 'hard' problems. Prerequisite: one of COMP 2140 (074.214), the former 074.206, or COMP 2061(C).

**COMP 3290** Introduction to Compiler Construction Cr.Hrs.3

(Formerly 074.329) Introduction to the standard compiler phases: scanning, parsing, symbol-table management, code generation, and code optimization. The emphasis is on the simpler techniques for compiler construction such as recursive descent. Prerequisites: COMP 2140 (or 074.214 or 074.206 or COMP 2061)(C) and COMP 2280 (074.228 or 074.222 or ECE 3610)(C). COMP 2160 (074.216) is recommended.

**COMP 3350** Software Engineering 1 Cr.Hrs.3

(Formerly 074.335) Introduction to software engineering. Software life cycle models, system and software requirements analysis, specifications, software design, testing and maintenance, software quality. Prerequisites: COMP 2150 (074.215) (C), or COMP 2061(074.206) (C).

**COMP 3370** Computer Organization Cr.Hrs.3

(Formerly 074.337) Principles of computer systems architecture, organization and design. Performance, instruction sets, processors, input/output, memory hierarchies. Prerequisite: COMP 2280 (074.228 or 074.222)(C) or ECE 3610 (C).

**COMP 3380** Databases Concepts and Usage Cr.Hrs.3

(Formerly 074.338) An introduction to database systems including the relational, hierarchical, network and entity-relationship models with emphasis on the relational model and SQL. Prerequisite: one of COMP 2140 (074.214), the former 074.206, or COMP 2061(C).

**COMP 3430** Operating Systems Cr.Hrs.3

(Lab Required) (Formerly 074.343) Operating systems, their design, implementation, and usage. Not to be held with the former 074.450 or 074.460. Prerequisites: one of COMP 2140 (074.214 or 074.206 or COMP 2061)(C); and COMP 2280 (C) or ECE 3610 (C). COMP 2160 (074.216) is recommended.

**COMP 3440** Programming Language Concepts Cr.Hrs.3

(Formerly 074.344) An introduction to major concepts involved in the design of modern programming languages. The imperative, functional, and logical families and differences between them. Facilities for high level data and control structures, modular programming, data typing, and other topics will be covered. Not to be held with the former 074.310 or 074.348. Prerequisite: one of COMP 2140 (074.214), the former 074.206, or COMP 2061(C).

**COMP 3490** Computer Graphics 1 Cr.Hrs.3

(Formerly 074.349) An introductory course in computer graphics including topics such as raster graphics, two and three dimensional transforms, and simple rendering. Prerequisite: one of COMP 2190, COMP 2191 (074.219) (C), or a calculus or algebra course at the 2000 level or higher (C).

**COMP 3620** Professional Practice in Computer Science Cr.Hrs.3

(Formerly 074.362) Ethical, moral, and legal issues in the development and use of computer systems; standards of practice; implications of advanced computer systems. Prerequisite: one of COMP 2140 (074.214), the former 074.206, or COMP 2061(C).

**COMP 3720** Computer Networks 1 Cr.Hrs.3

(Lab Required) (Formerly 074.372) This course examines the principles of computer networks, including network architectures, algorithms, and performance. Not to be held with ECE 3700 or the former 074.430. Prerequisites: COMP 2140 (074.214) (C) and COMP 2280 (074.228) (C).

**COMP 3820** Introduction to Bioinformatics Algorithms Cr.Hrs.3

An introduction to problems in molecular biology and computational solutions. Focus on design and analysis of efficient algorithms. Prerequisites: COMP 2080 (074.208) and MBIO 2410 (C); or permission of instructor. Suggested concurrent requirement: COMP 3170.

**COMP 3980** Workterm 2 Cr.Hrs.0

(Formerly 074.398) Work assignment in business, industry, or government for students registered in the Computer Science Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail). Prerequisite: COMP 2980 (074.298) (P).

#### 4.6.6 Computer Science -4000 Level

**COMP 4020** Human-Computer Interaction 2 Cr.Hrs.3

(Formerly 074.402) Advanced issues in the field of human-computer interaction. Topics will be selected from current research and development issues in the field of HCI. Prerequisite: COMP 3020 (074.302) (C). A course in cognitive psychology such as PSYC 2480 (017.248) is recommended.

**COMP 4050** Project Management Cr.Hrs.3

(Formerly 074.405) Introduction to the issues involved in managing large, complex software projects. Prerequisite: COMP 3350 (074.335) (C).

**COMP 4060** Topics in Computer Science Cr.Hrs.3

(Formerly 074.406) This course will examine topics of



interest at the fourth-year level. Specific topics will vary from year to year. Topics will be selected from current research in computer science. Prerequisite: Departmental permission.

**COMP 4140** Introduction to Cryptography and Cryptosystems Cr.Hrs.3  
(Formerly 074.414) Description and analysis of cryptographic methods used in the authentication and protection of data. Classical cryptosystems and cryptanalysis, the Advanced Data Encryption Standard (ADES) and Public-key cryptosystems. Prerequisite: COMP 2130 (074.213) (C). Students must be registered in fourth year of a Major or Honours programme in the Department of Computer Science.

**COMP 4180** Intelligent Mobile Robotics Cr.Hrs.3  
Topics include artificial intelligence, computer vision, human-robot interaction, and multi-robot systems. These abstract components are grounded in the problem of developing a team of intelligent mobile robots. All topics are covered with specific emphasis on applied problems, e.g. real-time performance. Not to be held with the former COMP 4060 – "Mobile Robotics". Prerequisites: COMP 2160 (074.216) and COMP 3190 (074.319) (C).

**COMP 4190** Artificial Intelligence Cr.Hrs.3  
(Formerly 074.419) Reasoning with temporal knowledge; causal reasoning; plausible reasoning; nonmonotonic reasoning; abductive reasoning. Prerequisite: COMP 3190 (074.319) (C).

**COMP 4200** Expert Systems Cr.Hrs.3  
Organization of expert systems; knowledge representation in expert systems; inference; knowledge engineering; tools for building expert systems; limitations of expert systems. Prerequisite: COMP 3190 (074.319) (C).

**COMP 4340** Graph Theory Algorithms 1 Cr.Hrs.3  
(Formerly 074.434) Spanning trees, connectivity, planar graphs, directed graphs, networks, colouring problems and tours are studied and their applications to computer science will be highlighted. Prerequisite: COMP 3170 (074.317) (C).

**COMP 4350** Software Engineering 2 Cr.Hrs.3  
(Formerly 074.435) Advanced treatment of software development methods. Topics will be selected from requirements gathering, design methodologies, prototyping, software verification and validation. Prerequisite: COMP 3350 (074.335) (C).

**COMP 4360** Machine Learning Cr.Hrs.3  
(Formerly 074.436) Learning strategies; evaluation of learning; learning in symbolic systems; neural networks, genetic algorithms. Prerequisite: COMP 3190 (074.319) (C).

**COMP 4380** Database Implementation Cr.Hrs.3  
(Formerly 074.438) Implementation of modern database systems including query modification/optimization, recovery, concurrency, integrity, and distribution. Prerequisite: COMP 3380 (074.338) (C).

**COMP 4420** Advanced Design and Analysis of Algorithms Cr.Hrs.3  
(Formerly 074.442) Algorithm design with emphasis on formal techniques in analysis and proof of correctness. Computational geometry, pattern matching, scheduling, numeric algorithms, probabilistic algorithms, approximation

algorithms and other topics. Prerequisites: COMP 3170 (074.317) (C); and STAT 1000 or STAT 1001 (005.100) (C).

**COMP 4430** Operating Systems 2 Cr.Hrs.3  
(Formerly 074.443) Design and implementation of modern operating systems. Detailed analysis of an open source modern operating system and hands-on experience with its kernel and major components. Prerequisites: COMP 2160 (074.216) (C) and COMP 3430 (074.343) (C).

**COMP 4490** Computer Graphics 2 Cr.Hrs.3  
(Formerly 074.449) Methods in computer graphics including topics such as representation of curves and surfaces, viewing in three dimensions, and colour models. Prerequisite: COMP 3490 (074.349) (C).

**COMP 4510** Introduction to Parallel Computation Cr.Hrs.3  
(Formerly 074.451) An overview of the architectures of current parallel processors and the techniques used to program them. Not to be held with ECE 4530 or the former 024.446. Prerequisites: COMP 3370 (074.337) (C) and COMP 3430 (074.343) (C).

**COMP 4520** Undergraduate Honours Project Cr.Hrs.3  
(Formerly 074.452) A research based project on a specific area of computer science. Students must find a faculty supervisor and write a proposal in their penultimate term. If acceptable, the defined research is to be carried out in the student's final term. Permission to take the course is given on an individual basis. Available to 4th Year students only. Prerequisite: departmental permission.

**COMP 4550** Real-Time Systems Cr.Hrs.3  
(Formerly 074.455) An introduction to the theory and practice of real-time systems. Topics include the design of real-time systems, scheduling, event based processing, and real-time control. This course may not be held for credit if a student has previously completed both of ECE 4240 and ECE 3760. Prerequisites: COMP 3430 (074.343) (C) and COMP 3370 (074.337) (C).

**COMP 4560** Industrial Project Cr.Hrs.3  
(Formerly 074.456) Students will work in teams on an industrial project. Projects are supplied by the Department. Prerequisites: COMP 3350 (074.335) (C) and departmental permission.

**COMP 4580** Computer Security Cr.Hrs.3  
(Lab Required) (Formerly 074.458) Computer security and information management. This course will examine state-of-the-art knowledge about the issues relevant to data and computer security. Prerequisite: COMP 3430 (074.343) (C); and COMP 3720 (074.372) or the former 074.430 (C).

**COMP 4690** Computer Systems and Architecture Cr.Hrs.3  
(Formerly 074.469) Investigation of today's modern computer architecture and system design concepts, including requirements, specifications, and implementation. Instruction sets, instruction-level parallelism, speculative execution, multi-threaded architectures, memory hierarchy, multiprocessors, storage design and implementation, and interconnection networks. Prerequisite: COMP 3370 (074.337) (C).

**COMP 4710** Introduction to Data Mining Cr.Hrs.3  
Introduction to data mining concepts and their applications. Prerequisite: COMP 3380 (074.338) or consent of



department.

**COMP 4720** Computer Networks 2 Cr.Hrs.3  
(Formerly 074.472) This course examines advanced topics in computer networks, including network security, network management, performance, and multimedia networking. Prerequisite: COMP 3720 (074.372) or the former 074.430 (C). Corequisite: COMP 3430 (074.343) (C).

**COMP 4740** Advanced Databases Cr.Hrs.3  
(Formerly 074.474) Parallel, distributed, object-oriented, object-relational, and XML databases; other emerging database technologies. Prerequisite: COMP 3380 (074.338) (C).

**COMP 4980** Workterm 3 Cr.Hrs.0  
(Formerly 074.498) Work assignment in business, industry, or government for students registered in the Computer Science Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail). Prerequisite: COMP 3980 (074.398) (P).

#### 4.7 Interdisciplinary Course in Forensic Science Course Description

**FORS 2000** Introductory Forensic Science Cr.Hrs.3  
Survey course which introduces forensic science via a series of guest lectures provided by experts from within the university and from the community (e.g., Winnipeg Police, RCMP, Chief Medical Examiner, etc.). Multidisciplinary topics will be covered including how a case is studied, use of scientific techniques in investigations, collection of evidence, the role of the expert witness, and presentation of evidence in court. Prerequisites: BIOL 1030 (C+), CHEM 1310 (C+).

#### 4.8 Genetics Program

**Program Director:** Gary Anderson

**Campus Address/General Office:** 212 Biological Sciences Building

**Telephone:** 204 474 9245

**Email Address:** [andersow@cc.umanitoba.ca](mailto:andersow@cc.umanitoba.ca)

**Website:** [umanitoba.ca/science/biological\\_sciences](http://umanitoba.ca/science/biological_sciences)

The Faculty of Science offers an interdisciplinary program leading to a B.Sc. (Honours) degree in Genetics. Genetics is the science of heredity dealing with the mechanisms of inheritance and has generated concepts basic to modern biology. Three areas are represented in this program: classical genetics, population genetics, and molecular genetics. Courses from Arts, Agricultural and Food Sciences, and Medicine are included in this program.

#### Genetics Entry, Continuation, and Graduation requirements Honours

**To enter** the Honours program in Genetics, a student must have completed at least 24 credit hours with a minimum GPA of 3.00, and also obtained a minimum grade of "B" in

BIOL 1030, and a minimum grade of "C+" in CHEM 1310. STAT 1000, MATH 1500 and the additional 3 credit hours of specified Mathematics courses are program requirements and students are strongly encouraged to complete these courses in first year.

\* Students interested in studying Genetics should note that Grade 12 mathematics and chemistry are prerequisite to CHEM 1300. Effective 2009-2010, students will also require Biology 40S (or equivalent) and any Grade 12 mathematics course (or equivalent) for entry to BIOL 1020 (the required prerequisite for BIOL 1030).

**To continue** in the Genetics Honours program, students must maintain a minimum GPA of 3.00, and complete a minimum of 9 credit hours during each Fall and Winter Term.

**To graduate** with the B. Sc. Honours de-gree, a student must maintain a minimum 3.00 GPA and achieve a minimum grade of "C" on all courses that make up the 120 credit hours of the degree.

#### Honours Cooperative Option

Students interested in alternating academic terms and terms of paid employment as part of their Honours Genetics program may enter the Co-operative Option in April of their second year in Genetics Honours. This five year program provides students with minimum 12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and University units.

The course and grade requirements for **entry and continuation** in the Co-operative Option are the same as that for regular Honours program (see above). Students are required to complete the first and second year requirements of the program and MBI 3410 before they begin their first employment term. Each academic term in the third and subsequent years must comprise nine (9) credit hours. Students should refer to the general faculty regulations for B. Sc. (Honours) Cooperative Options in Section 3.6.

Students must apply for openings in the Cooperative Option and should check with the Co-op office for the April deadline information. They will be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the students receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each 4-month employment term.



**Major**

**To enter** the Major Degree program in Genetics, a student must have completed at least 24 credit hours with a minimum GPA of 2.00, and also obtained a minimum grade of “C+” in BIOL 1030, and a minimum grade of “C” in CHEM 1310. STAT 1000, MATH 1500 and the additional 3 credit hours of specified Mathematics courses are program requirements and students are strongly encouraged to complete these courses in first year.

\* Students interested in studying Genetics should note that Grade 12 mathematics and chemistry are prerequisite to CHEM 1300. Effective 2009-2010, students will also require Biology 40S (or equivalent) and any Grade 12 mathematics course (or equivalent) for entry to BIOL 1020 (the required prerequisite for BIOL 1030).

**To continue** in the Genetics Major Degree program, students must maintain a minimum GPA of 2.00.

**To graduate** with the Bachelor of Science (Major) in Genetics, a student must obtain passing grades on all courses, obtain a minimum GPA of 2.00 on the 120 credit hours that make up the degree, and a minimum grade of C in all required and optional courses that contribute to the Major.

**Major Cooperative Option**

Students interested in alternating academic terms and terms of paid employment as part of their Genetics Major program may enter the Co-operative Option in April of their second year. This five year program provides students with minimum

12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and University units.

The course and grade requirements for **entry and continuation** in the Co-operative Option are the same as that for regular Major Degree program (see above). Students are required to complete the first and second year requirements of the program and MBIO 3410 before they begin their first employment term. Students should refer to the general faculty regulations for B. Sc. (Major) Co-operative Options in Section 3.6.

Students must apply for openings in the Co-operative Option and should check with the Co-op office for the April deadline information. They will be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the student(s) they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each 4-month employment term.

**4.8.2 Genetics Program Charts,**

4.8.2 Genetics			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS (Including Cooperative Option<sup>3,4,5</sup> if selected) 120 CREDIT HOURS</b>			
CHEM 1300, CHEM 1310	BIOL 2500, BIOL 2520	BIOL 3500	
BIOL 1020, BIOL 1030	CHEM 2210, CHEM 2220, CHEM 2360 (MBIO 2360), CHEM 2370 (MBIO 2370)	MBIO 3410	
STAT 1000		PLNT 3140	
MATH 1500 <sup>1</sup>	MBIO 1010, MBIO 2020	BGEN 3020 (6)	
One of: MATH 1200, MATH 1300 <sup>1</sup> , or MATH 1700 <sup>1</sup>	STAT 2000	One of: ANTH 2240, ANTH 2560, ANTH 2860, or ANTH 2890	
		42 credit hours from list of optional courses (a minimum of 18 of these credit hours must be 4000 level)	
<b>In University 1 or Year 2:</b>		<b>Work Terms (if Co-op Selected)<sup>3,4,5</sup>:</b>	
3 credit hours from the Faculty of Arts		MBIO 3980, MBIO 3990, MBIO 4980 and/or MBIO 4990	
3 credit hour “W” course <sup>2</sup>			



6 credit hours of electives			
30 Hours	30 Hours	30 Hours	30 Hours
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>MAJOR (Including Cooperative Option if selected)<sup>1</sup> 120 CREDIT HOURS</b>			
CHEM 1300, CHEM 1310	BIOL 2500, BIOL 2520	BIOL 3500	
BIOL 1020, BIOL 1030	CHEM 2210, CHEM 2220, CHEM 2360 (MBIO 2360), CHEM 2370 (MBIO 2370)	MBIO 3410	
STAT 1000		PLNT 3140	
MATH 1500 <sup>1</sup>	MBIO 1010, MBIO 2020	BGEN 3020 (6)	
One of: MATH 1200, MATH 1300 <sup>1</sup> , or MATH 1700 <sup>1</sup>	STAT 2000	One of: ANTH 2240, ANTH 2560, ANTH 2860, or ANTH 2890	
		33 credit hours from list of optional courses (a minimum of 15 of these credit hours must be 4000 level)	
		9 credit hours of approved elective courses	
<b>In University 1 or Year 2:</b>		<b>Work Terms (if Co-op Selected)<sup>3,4,5</sup>:</b>	
3 credit hours from the Faculty of Arts		MBIO 3980, MBIO 3990, MBIO 4980 and/or MBIO 4990	
3 credit hour "W" course <sup>2</sup>			
6 credit hours of electives			
<b>NOTES:</b>			
1 MATH 1310 may be taken in place of MATH 1300; MATH 1510, or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700; MATH 1690 may be taken in place of MATH 1500 and MATH 1700.			
2 As there are no electives in Year 2 of the program, students should complete the University written English requirement in University 1. If not completed in University 1, a "W" course must be completed prior to Year 3 in addition to the required Year 2 courses.			
3 Students that begin their first work term in May must take BGEN 3020 in Year 3, while students that begin their first work term in January must take BGEN 3020 in Year 4.			
4 IMPORTANT: Students in the cooperative program are advised to ensure that they are able to satisfy the prerequisites for all 3000 and 4000 level courses they plan to take.			
5 MBIO 4530 and BGEN 4010 are not available to students in the Cooperative Option. (The number 6 in brackets indicates a 6 credit hour course.)			

**The optional courses are:**

*Biological Sciences:* BIOL 2410, BIOL 2420, BIOL 2540, BIOL 3290, BIOL 3300, BIOL 3560, BIOL 4500, BIOL 4540, BIOL 4542, BIOL 4560

*Chemistry:* CHEM 2280, CHEM 2290, CHEM 4360, CHEM 4370, CHEM 4620, CHEM 4630

*Microbiology:* MBIO 3000, MBIO 3010, MBIO 3030, MBIO 3430, MBIO 3440, MBIO 3450, MBIO 3460, MBIO 4010, MBIO 4020<sup>2</sup>, MBIO 4410, MBIO 4530<sup>1</sup> (6), MBIO 4540, MBIO 4670 (or the former MBIO 4570), MBIO 4672<sup>2</sup>, MBIO 4600, MBIO 4610.

*Forensic Science:* FORS 2000 (satisfies the University "W" requirement)

*Computer Science:* COMP 1010, COMP 1020, COMP 1260, COMP 1270

*Physics:* PHYS 1020, PHYS 1030, PHYS 1050, PHYS 1070



*Animal Science:* ANSC 3500, ANSC 4280

*Pharmacology:* PHAC 4030, PHAC 4040

*Plant Science:* PLNT 2530, PLNT 3500, PLNT 3520, PLNT 4330, PLNT 4610

*Human Genetics:* BGEN 4010\*

By an appropriate selection of courses from this list, students can obtain particular program emphasis in either plant, human or molecular genetics.

All programs must contain a minimum of 18 credit hours of 4000 level courses as options in Years 3 and 4.

Other suitable optional courses may be arranged through consultation with the Genetics program committee.

#### NOTES:

<sup>1</sup> MBIO 4530 (6) and BGEN 4010 are project courses. A research project is chosen in consultation with the Microbiology department (MBIO 4530) or Biochemistry and Medical Genetics (BGEN 4010) and the Genetics program committee, and is supervised by a staff member. Only one of MBIO 4530 or BGEN 4010 may be elected in this program.

<sup>2</sup> MBIO 4020 and MBIO 4672 are not available options for students in the Genetics Honours Degree program.

## 4.9 Department of Mathematics

**Head:** David Gunderson

**Campus Address/General Office:** 342A Machray Hall

**Telephone:** 204 474 8703

**Website:** <http://www.math.umanitoba.ca/>

### 4.9.1 Program Information

Mathematics provides the language, reasoning and analytic tools that many other disciplines use to investigate their areas. These include all the physical sciences, computer and engineering sciences, social sciences, and the biological and health sciences. A wide range of business, industrial, and government programs rely on mathematics to provide insight and analysis. Students may specialize in mathematics alone or in combinations with physics, computer science, economics, or statistics.

The department must approve a student's Honour or Major program each session. Students must also obtain approval for any and all revisions to their program.

**NOTE:** Students entering either the Faculty of Arts or Science, and intending to take courses from the department, are strongly advised to speak to a Science student advisor or a faculty advisor in the department concerning an appropriate choice of mathematics courses. They may also consult the Department of Mathematics website at [umanitoba.ca/science/mathematics](http://umanitoba.ca/science/mathematics).

#### Honours Requirements

**To enter** the Honours program in Mathematics, a student must have completed at least 24 credit hours with a minimum GPA of 3.00, and also obtained a minimum grade of "B" in the following courses: MATH 1300; and one of MATH 1700 or MATH 1690 (or equivalent).

**To continue** in the Mathematics Honours program, students must maintain a minimum GPA of 3.00, and complete a minimum of 9 credit hours during each Fall and Winter Term.

**To graduate** with the B. Sc. Honours degree, a student must maintain a minimum 3.00 GPA and achieve a minimum grade of "C" on all courses that make up the 120 credit hours of the degree.

The program for students who elect Honours in Mathematics is as follows:

Year 2 Mathematics courses as indicated in the chart below and nine (9) credit hours from such fields as physics, chemistry, actuarial mathematics, computer science, statistics, philosophy, or economics. Other fields may be elected with the approval of the department.



Year 3 Mathematics courses as indicated in the chart below and electives to be chosen from the subject fields below or a third or fourth year Mathematics course not already elected. Students performing satisfactorily in Year 2 may obtain permission to take an additional course.

Year 4 Mathematics courses as indicated in the chart below and electives to be chosen from the subject fields below or a third or fourth year Mathematics course not already elected. Students performing satisfactorily in Year 3 may obtain permission to take an additional course.

**Electives** normally allowed are:

*Statistics:* STAT 2000, STAT 2400, STAT 3470, STAT 3480, STAT 3400 (STAT 3500), STAT 3800 (STAT 3600), STAT 4100 (STAT 4140), STAT 4520, STAT 4530, STAT 4580, STAT 4590, STAT 4600, STAT 4620, STAT 4630, STAT 4690.

*Physics:* PHYS 2380, PHYS 2600, PHYS 2610, PHYS 2650, PHYS 3670, PHYS 3680, PHYS 3650, PHYS 3660, PHYS 3630, PHYS 3640, PHYS 3380, PHYS 4390, PHYS 4620, PHYS 4640, PHYS 4650.

*Chemistry:* CHEM 2280, CHEM 2290, CHEM 3360, CHEM 3370, CHEM 4640, CHEM 4650.

*Economics:* ECON 2530, ECON 2700, ECON 3700, ECON 3730, ECON 4120, ECON 4130.

*Mechanical Engineering:* MECH 3490.

Other courses may be chosen with permission of the department. Students are required to obtain the approval of the department concerning their choice of electives.

**Double Honours:** A student may elect Honours in Mathematics and one other field, subject to the approval of both departments. The Mathematics prescription for a Double Honours program is as indicated in the table below.

Honours programs must be approved each year by the department.

#### Four Year Major Requirements

**To enter** the four year Major in Mathematics, a student must have a "C+" in either MATH 1690 or in two of MATH 1300, MATH 1500 and MATH 1700 or any equivalent and have satisfied all Faculty requirements for entry to the program.

**To continue** in the Mathematics Major degree program students must maintain a minimum DGPA of 2.00.

**To graduate** with the B. Sc. Major degree, a student must achieve a minimum GPA of 2.00 on the 120 credit hours that contribute to the degree, and a minimum grade of "C" in each of the Major Program Specific courses (see below).

#### Major Program Specific Courses

MATH 1300, MATH 1500, MATH 1700, (or MATH 1690 in place of MATH 1500 and MATH 1700), MATH 2202, MATH 2352, MATH 2600, MATH 2750, MATH 2800, MATH 3300, MATH 3350, MATH 3400, MATH 3700, MATH 3710, MATH 3740, MATH 3760, and MATH 3800.

It is suggested that among their electives, students might choose courses in which mathematics is extensively used, for example, courses in physics, chemistry and certain courses in economics. For advice on this point students should talk to a faculty member in the department.

#### Four Year Major in Applied Mathematics with Option (Computer Science, Economics, Statistics)

These programs provide a sound general knowledge of applied mathematics together with a significant number of courses in the option area. Courses in the Computer Science option provide training in aspects of computer science which are most useful to the practicing mathematician. Courses in the Computer Sciences, Economics, and Statistics options are fundamental to each area and provide a strong, mathematical basis for further study.

**To enter** the four year Major in Applied Mathematics with one of the above three options, a student must have a "C+" in either MATH 1690 or two of MATH 1200, MATH 1300, MATH 1500, or MATH 1700, one of which must be either MATH 1500, or MATH 1700, and have satisfied all faculty requirements for entry to the program.

**To continue** in the Applied Mathematics Major degree programs, students must maintain a minimum DGPA of 2.00.

**To graduate** with the B. Sc. Major degree, a student must achieve a minimum GPA of 2.00 on the 120 credit hours that contribute to the degree, and a minimum grade of "C" in each of the Major Program Specific courses (see below).

#### Applied Mathematics Major Program Specific Courses

MATH 1200, MATH 1300, MATH 1500, MATH 1700 (or MATH 1690 in place of MATH 1500 and MATH 1700), MATH 2300, MATH 2400, MATH 2600, MATH 2720, MATH 2730, MATH 2800, MATH 3500, MATH 3600, MATH 3700, MATH 3740, MATH 3800, MATH 3810, and MATH 3820.

It is recommended that students take all 12 credit hours of 1000 level mathematics courses in their initial 30 credit hours; however, students should take at least MATH 1300, MATH 1500 and MATH 1700. See the individual charts below for additional requirements for each option.

**Options List:** MATH 2450, MATH 2500, MATH 2552, the former MATH 2550, or any 3rd or 4th year Mathematics course.

#### Three Year General



As prescribed with all other faculty regulations in Section 3.2, students in this program must select 18 credit hours of 2000, 3000, and (or) 4000 level courses from each of **two** Science areas. To satisfy the requirement in the area of Mathematics, students must select a minimum of 18 credit hours of 2000, 3000, and (or) 4000 level Mathematics courses (subject to the Faculty requirement that of the 36 credit hours in the two

advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level).

See a Science Student Advisor or a Faculty Advisor in the department for information regarding entry to or completion of any of the programs outlined below.

#### 4.9.2.1 Mathematics Honours Program Chart

4.9.2 Mathematics			
YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>MATHEMATICS HONOURS<sup>4</sup> 120 CREDIT HOURS</b>			
MATH 1300 <sup>1</sup> (B)  MATH 1690 (6) (B) (or MATH 1500 <sup>1</sup> and MATH 1700 <sup>1</sup> (B))	MATH 2202, MATH 2352 (6), MATH 2600, MATH 2750 (6), MATH 2800	<b>48 credit hours<sup>3</sup> of 3000 and 4000 level Mathematics<sup>4</sup> courses,</b> which must include the following:  MATH 3230, MATH 3400, MATH 3760 (6), MATH 3800; and one of the two concentrations listed below:  <b>Applied and Computational Mathematics Concentration:</b>  MATH 3300 or MATH 3350 (6); MATH 3700 or MATH 3710; and at least 12 credit hours from the former 136.351, MATH 3600, MATH 3810, MATH 3820, MATH 4310, MATH 4610, MATH 4800 or MATH 4810  <b>Pure Mathematics Concentration:</b>  MATH 3350 (6), MATH 3710 and at least 12 credit hours from MATH 3240, MATH 4200, MATH 4350 (6), MATH 4410 or MATH 4420, MATH 4710, MATH 4750 (6)	
The following can be completed in Year 1 or Year 2:  STAT 1000 <sup>2</sup> , COMP 1010 <sup>2</sup>  6 credit hours from the Faculty of Arts, which should include the required "W" course			
18 credit hours of electives (review above list for acceptable electives)		12 credit hours of approved electives (review above list for acceptable electives)	
30 credit hours	30 credit hours	30 credit hours	30 credit hours

**NOTES:**

1 MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300; MATH 1710 may be taken in place of MATH 1700. MATH 1690 may be taken in place of both MATH 1500 and 1700).

2 STAT 1000 and COMP 1010 must be completed by the end of Year 2.

3 Students considering graduate work in pure mathematics should note that many graduate schools may require a student to rectify any deficiencies in MATH 4200, MATH 4210, MATH 4350, MATH 4710, MATH 4720 and MATH 4750.

4 MATH 3200, MATH 3210, MATH 3740 and MATH 3910 cannot be used in an Honours program.

5 **IMPORTANT:** The four year Major programs need not be completed in the manner prescribed in the charts above. Each chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. Please refer to the text above for the minimum requirements for entry to a four year Major.

(Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

#### 4.9.2.2 Mathematics Double Honours Program Chart

<b>MATHEMATICS HONOURS DOUBLE<sup>4</sup> MINIMUM 120 CREDIT HOURS</b> (comprising courses listed in chart below, and the required courses from the other department)			
MATH 1300 <sup>1</sup> (B), MATH 1690 (6) (B)  (or MATH 1500 <sup>1</sup> and MATH	MATH 2202, MATH 2352 (6), MATH 2600, MATH 2750 (6), MATH 2800	MATH 3230, MATH 3350 (6), MATH 3710, MATH 3760 (6)	MATH 3800  Plus 12 credit hours from MATH 4200, MATH 4210, MATH 4350, MATH 4710, MATH 4720, MATH



1700 <sup>1</sup> (B)			47503
STAT 1000 <sup>2</sup>			Plus at least an additional 3 credit hours from among the above and MATH 3220, MATH 3240, MATH 3400, MATH 3430, MATH 3450, MATH 4250, MATH 4400, MATH 4410, MATH 4420, MATH 4430, MATH 4800, MATH 4920, MATH 4960
COMP 1010 <sup>2</sup>			
Plus 6 credit hours from the Faculty of Arts, which should include the required "W" course			

**NOTES:**

1 MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300; MATH 1710 may be taken in place of MATH 1700. MATH 1690 may be taken in place of both MATH 1500 and 1700).

2 STAT 1000 and COMP 1010 must be completed by the end of Year 2.

3 Students considering graduate work in pure mathematics should note that many graduate schools may require a student to rectify any deficiencies in MATH 4200, MATH 4210, MATH 4350, MATH 4710, MATH 4720 and MATH 4750.

4 MATH 3200, MATH 3210, MATH 3740 and MATH 3910 cannot be used in an Honours program.

5 **IMPORTANT:** The four year Major programs need not be completed in the manner prescribed in the charts above. Each chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. Please refer to the text above for the minimum requirements for entry to a four year Major.

(Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

**4.9.2.3 Mathematics Major Program Chart**

MATHEMATICS FOUR YEAR MAJOR <sup>5</sup> 120 CREDIT HOURS		
MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>	MATH 2202, MATH 2352 (6), MATH 2600, MATH 2750 (6), MATH 2800	MATH 3300 or MATH 3350 (6), MATH 3400, MATH 3700 or MATH 3710, MATH 3740 (6) or MATH 3760 (6), MATH 3800 and enough courses from MATH 2400, MATH 2500, STAT 2000 and all third and fourth year Mathematics courses to make <b>48 credit hours</b>
The following can be completed in Year 1 or Year 2:  STAT 1000 <sup>2</sup> , COMP 1010 <sup>2</sup>  6 credit hours from the Faculty of Arts, which should include the required "W" course  18 credit hours of approved electives		12 credit hours of approved electives

**NOTES:**

1 MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300; MATH 1710 may be taken in place of MATH 1700. MATH 1690 may be taken in place of both MATH 1500 and 1700).

2 STAT 1000 and COMP 1010 must be completed by the end of Year 2.

3 Students considering graduate work in pure mathematics should note that many graduate schools may require a student to rectify any deficiencies in MATH 4200, MATH 4210, MATH 4350, MATH 4710, MATH 4720 and MATH 4750.

4 MATH 3200, MATH 3210, MATH 3740 and MATH 3910 cannot be used in an Honours program.

5 **IMPORTANT:** The four year Major programs need not be completed in the manner prescribed in the charts above. Each chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. Please refer to the text above for the minimum requirements for entry to a four year Major.

(Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

**4.9.2.4 Applied Mathematics with Computer Science Option Program Chart**

APPLIED MATHEMATICS FOUR YEAR MAJOR with COMPUTER SCIENCE OPTION <sup>5</sup> 120 CREDIT HOURS		
MATH 1200, MATH 1300 <sup>1</sup> ,	MATH 2300, MATH 2600, MATH 2720, MATH 2730,	MATH 2400, MATH 3600, MATH 3700, MATH 3740 (6), MATH 3800, MATH 3810, MATH 3820



MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>	MATH 2800	
COMP 1010, COMP 1020	COMP 2140	
6 credit hours from the Faculty of Arts, which should include the required "W" course	STAT 1000 and STAT 2000	
6 credit hours of approved electives	6 credit hours chosen from:	
	MATH 2450 (6), MATH 2500, MATH 2552 (6), or any 3000 / 4000 level MATH course	
	One of the following patterns (9 credit hours):	
	<b>Graphics:</b> COMP 2190, COMP 3490, COMP 4490	
	<b>Software:</b> COMP 2150, COMP 3440; and one of: COMP 2160, COMP 3380, or COMP 3020	
	<b>Theoretical Computer Science:</b> COMP 2080, COMP 2130; and one of: COMP 3170 or COMP 4530	
	<b>Hardware:</b> COMP 2160, COMP 2280; and one of: COMP 3370 or COMP 3430	
	<b>Artificial Intelligence:</b> COMP 3190; and two of: COMP 4180, COMP 4190, COMP 4200, COMP 4360	
	27 credit hours of electives taken during years 2, 3 and 4	

**NOTES:**

1 MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300; MATH 1710 may be taken in place of MATH 1700. MATH 1690 may be taken in place of both MATH 1500 and 1700).

2 STAT 1000 and COMP 1010 must be completed by the end of Year 2.

3 Students considering graduate work in pure mathematics should note that many graduate schools may require a student to rectify any deficiencies in MATH 4200, MATH 4210, MATH 4350, MATH 4710, MATH 4720 and MATH 4750.

4 MATH 3200, MATH 3210, MATH 3740 and MATH 3910 cannot be used in an Honours program.

5 **IMPORTANT:** The four year Major programs need not be completed in the manner prescribed in the charts above. Each chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. Please refer to the text above for the minimum requirements for entry to a four year Major.

(Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

**4.9.2.5 Applied Mathematics with Economics Option Program Chart**

<b>APPLIED MATHEMATICS FOUR YEAR MAJOR with ECONOMICS OPTION<sup>6</sup> 120 CREDIT HOURS</b>		
MATH 1200, MATH 1310 <sup>1</sup> , MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>	MATH 2300, MATH 2600, MATH 2720, MATH 2730, MATH 2800	MATH 2400, MATH 3600, MATH 3700, MATH 3740 (6), MATH 3800, MATH 3810, MATH 3820, MATH 4310
ECON 1010, ECON 1020 (or ECON 1210, ECON 1220)		
9 credit hours of electives	STAT 1000, STAT 2000	
	COMP 1010	
	ECON 2530, ECON 3730	
	<b>3 credit hours from:</b>	
	MATH 2450 (6), MATH 2500, MATH 2552 (6), or any 3000 / 4000 level MATH course	
	<b>6 credit hours from:</b>	
	ECON 2450, ECON 2460, ECON 2470 and ECON 2480	



	24 credit hours of approved electives taken during years 2, 3 and 4
3 credit hour "W" course must be taken in Year 1 or Year 2	

**NOTES:**

1 MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300; MATH 1710 may be taken in place of MATH 1700. MATH 1690 may be taken in place of both MATH 1500 and 1700).

2 STAT 1000 and COMP 1010 must be completed by the end of Year 2.

3 Students considering graduate work in pure mathematics should note that many graduate schools may require a student to rectify any deficiencies in MATH 4200, MATH 4210, MATH 4350, MATH 4710, MATH 4720 and MATH 4750.

4 MATH 3200, MATH 3210, MATH 3740 and MATH 3910 cannot be used in an Honours program.

5 **IMPORTANT:** The four year Major programs need not be completed in the manner prescribed in the charts above. Each chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. Please refer to the text above for the minimum requirements for entry to a four year Major.

(Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

**4.9.2.6 Applied Mathematics with Statistics Option Program Chart**

APPLIED MATHEMATICS FOUR YEAR MAJOR with STATISTICS OPTION <sup>b</sup> 120 CREDIT HOURS		
MATH 1200, MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>	MATH 2300, MATH 2600, MATH 2720, MATH 2730, MATH 2800	MATH 2400, MATH 3600, MATH 3700, MATH 3740 (6), MATH 3800, MATH 3810, MATH 3820
STAT 1000	STAT 2000	STAT 2400, STAT 3400, STAT 3470, STAT 3480, STAT 3800
6 credit hours from the Faculty of Arts, which should include the required "W" course	COMP 1010	
	6 credit hours from:  MATH 2450 (6), MATH 2500, MATH 2552 (6), or any 3000 / 4000 level MATH course	
	6 credit hours of 3000 or 4000 level Statistics courses	
9 credit hours of electives	18 credit hours of approved electives taken during years 2, 3 and 4	

**NOTES:**

1 MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300; MATH 1710 may be taken in place of MATH 1700. MATH 1690 may be taken in place of both MATH 1500 and 1700).

2 STAT 1000 and COMP 1010 must be completed by the end of Year 2.

3 Students considering graduate work in pure mathematics should note that many graduate schools may require a student to rectify any deficiencies in MATH 4200, MATH 4210, MATH 4350, MATH 4710, MATH 4720 and MATH 4750.

4 MATH 3200, MATH 3210, MATH 3740 and MATH 3910 cannot be used in an Honours program.

5 **IMPORTANT:** The four year Major programs need not be completed in the manner prescribed in the charts above. Each chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their programs with a view to satisfying the prerequisites of the required courses. Please refer to the text above for the minimum requirements for entry to a four year Major.

(Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

**4.9.2.7 Mathematics General Degree and Minor Requirements**

THREE YEAR GENERAL (90 CREDIT HOURS)	
	18 credit hours of 2000, 3000, and (or) 4000 level Mathematics courses (subject to the Faculty requirement that of the 36 credit hours to be completed in the two advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level.)"
MINOR	
MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup> plus a minimum of 9 credit hours from: MATH 1200 and 2000 and (or) 3000 level Mathematics courses	

**4.9.2.8 Mathematics – Physics and Astronomy Joint Honours Program**

Honours Requirements
<b>To enter</b> the Joint Honours Mathematics – Physics Honours program the student must have a minimum grade of "B" in: MATH



1300<sup>1</sup>, MATH 1510<sup>1</sup>, MATH 1710<sup>1</sup> (or MATH 1690), PHYS 1050 (or “B+” in PHYS 1020) and PHYS 1070.

To graduate with the B. Sc. Honours degree, a student must achieve a minimum DGPA of 3.00 and a minimum grade of “C+” in each of the Honours Program Specific courses, and a minimum grade of “C” on all remaining courses that contribute to the 129 credit hours of the degree. See the Calendar entry for each of the Department of Mathematics and the Department of Physics and Astronomy for the Honours Program Specific courses.

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS 129 CREDIT HOURS (129 credit hours)</b>			
MATH 1300 <sup>1</sup> (B), MATH 1510 <sup>1</sup> (B), MATH 1710 <sup>1</sup> (B)	PHYS 2260, PHYS 2380, PHYS 2600, PHYS 2610, PHYS 2650 <sup>3</sup>	MATH 3230, MATH 3350 (6) (or MATH 3300 and MATH 3310), MATH 3700 or MATH 3710, MATH 3760 (6)	MATH 3800, MATH 4810 <sup>6</sup>
PHYS 1050 (B) (or PHYS 1020 (B+)) <sup>2</sup> and PHYS 1070 (B)	MATH 2202, MATH 2352 (6), MATH 2750 (6), MATH 2800	PHYS 3670, PHYS 3680, PHYS 3650, PHYS 3630, PHYS 3640 <sup>5</sup> , PHYS 3380	9 credit hours of 3000 or 4000 level Mathematics courses, of which 3 credit hours must be at the 4000 level
STAT 1000			PHYS 3430 (6), PHYS 3660, PHYS 4390
COMP 1010			6 credit hours from 3000 and 4000 level Physics Honours courses
6 credit hours from the Faculty of Arts, which should include the required “W” course <sup>4</sup>			
27 Hours	33 Hours	36 Hours	33 Hours

**NOTES:**

- MATH 1310 may be taken in place of MATH 1300; MATH 1500, or MATH 1520 may be taken in place of MATH 1510; MATH 1700 may be taken in place of MATH 1710. MATH 1690 may be taken in place of both MATH 1510 and 1710.
- PHYS 1030 is not suitable for entry to the program. Students must also take PHYS 1070 if they have already taken PHYS 1030. Students can hold credit for both PHYS 1030 and PHYS 1070.
- The corequisite of PHYS 2490 is waived. It is recommended that students audit PHYS 2390 and PHYS 2490 in second year.
- As there are no electives in Year 2 of the program, students should complete the university written English requirement in University I. If not completed in University I, a “W” course must be completed prior to Year 3 in addition to the required Year 2 courses.
- The prerequisite of PHYS 2490 is waived.
- The prerequisite of MATH 3810 has been waived for students who have completed PHYS 3630, PHYS 3640 and PHYS 3380. (Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

**4.9.2.9 Mathematics – Economics Joint Honours Program**

The Department of Mathematics along with the Department of Economics (Faculty of Arts) offer a joint Honours program for students wishing in depth study in Mathematics and Economics. For Economics course listings, refer to the Faculty of Arts chapter in the Calendar.

To enter the Joint Honours Mathematics - Economics program, the student must have a minimum grade of “B” in: ECON 1010 and ECON 1020 (or ECON 1210 and ECON 1220), MATH 1300<sup>1</sup>, MATH 1700<sup>1</sup> and have satisfied the Faculty of Science requirements for entry to the honours program.

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS 120 CREDIT HOURS</b>			
ECON 1010, ECON 1020 (or ECON 1210 and ECON 1220)	ECON 2700, ECON 2800	ECON 3700, ECON 3800, ECON 3180 <sup>7</sup> (or STAT 2000) <sup>3</sup>	
MATH 1300 <sup>1</sup> , MATH 1500 <sup>1,2</sup> , MATH 1700 <sup>1,2</sup>	MATH 2202, MATH 2352 (6), MATH 2750 (6), MATH 2800	MATH 2600 <sup>3</sup> , MATH 3230, MATH 3300 <sup>5</sup> , MATH 3400, MATH 3700 (or MATH 3710), MATH 3740 (or MATH 3760) (6)	
STAT 1000 <sup>3</sup>		24 credit hours of approved Economics courses <sup>4</sup>	
COMP 1010 <sup>3</sup>		6 credit hours of Mathematics courses at the 3000 or 4000 level, which must include at least one of MATH 3510, MATH 3600, MATH 3810, MATH 3820, MATH 4310, or any Mathematics course at the 4000 level.	
9 credit hours of electives <sup>6</sup> , including the required “W” course.	6 credit hours of approved electives <sup>6</sup>		
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

- MATH 1310 may be taken in place of MATH 1300; MATH 1510, or MATH 1520 may be taken in place of MATH 1500; MATH



1710 may be taken in place MATH 1700.  
 2 The combination of MATH 1500<sup>1</sup> and MATH 1700<sup>1</sup> may be replaced by MATH 1690.  
 3 Some courses may be taken in a different year than indicated; STAT 1000, COMP 1010, MATH 2600 and ECON 3180 (or STAT 2000) may be taken in Year 2.  
 4 Of the 24 credit hours of electives in Economics in Years 3 and 4, no more than 6 credit hours may be at the 2000 level (with the exception of ECON 2530) and at least 6 credit hours must be at the 4000 level.  
 5 MATH 3300, plus 3 of the 6 unallocated credit hours in Mathematics in Years 3 and 4, may be replaced by MATH 3350.  
 6 Students are encouraged to consider useful courses in Computer Science and Statistics as electives.  
 7 The prerequisite of ECON 3170 is waived for students in this program.  
 (The number 6 in brackets indicates a 6 credit hour course.)

**4.9.2.10 Mathematics - Computer Science Joint Honours Program**

**4.9.2.10 Mathematics - Computer Science Joint Honours Program (Including Co-op if selected)**

The departments of Computer Science and Mathematics offer a joint Honours program for in-depth study in both Computer Science and Mathematics.

**Honours Requirements**

**To enter** the Joint Honours Computer Science-Mathematics program, the student must have a minimum grade of “B” in each of COMP 1020, MATH 1300 and MATH 1700 (or any equivalent), and have satisfied the Faculty of Science requirements for entry to the honours program. It is recommended that STAT 2000 be completed in University 1 as an elective.

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS (Including Cooperative Option if selected) 120 CREDIT HOURS</b>			
COMP 1010 and COMP 1020 (B)	COMP 2080 <sup>3</sup> , COMP 2140, COMP 2160, COMP 2280	COMP 3030, COMP 3170, COMP 3370, COMP 3430, COMP 4310 (or COMP 4420)	
MATH 1300 <sup>1</sup> (B), MATH 1690 (6) (B),  (or MATH 1500 <sup>1</sup> and MATH 1700 <sup>1</sup> (B))	MATH 2202, MATH 2352 (6), MATH 2750 (6)  one of: MATH 2600 or MATH 2800	Three of: COMP 3020, COMP 3290, COMP 3350, COMP 3380, COMP 3720  Two of: COMP 4020, COMP 4050, COMP 4290, COMP 4350, COMP 4380, COMP 4720	
STAT 1000 (C)  6 credit hours from the Faculty of Arts, which should include the required 3 credit hour “W” course <sup>2</sup>		MATH 3740 (6) or MATH 3760 (6); and MATH 3350 (or MATH 3300 and MATH 3310) (6); and MATH 3400; and whichever of MATH 2600 or MATH 2800 not yet taken	
6 credit hours of electives	<b>Work Term (if Co-op Selected)<sup>4</sup>:</b>  COMP 2980	<b>Work Term (if Co-op Selected)<sup>4</sup>:</b>  COMP 3980	<b>Work Term (if Co-op Selected)<sup>4</sup>:</b>  COMP 4980
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

1 MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1310 may be taken in place of MATH 1300; MATH 1710 may be taken in place of MATH 1700.  
 2 As there are no electives in Year 2 of the program, students should complete the written English requirement in Year 1. If not completed in Year 1, a “W” course must be completed prior to Year 3 in addition to the required Year 2 courses.  
 3 Students in this program will not take COMP 2130 or COMP 3130. COMP 2130 is waived as a prerequisite for students in this program.  
 4 When chosen, the Cooperative Option work terms (2980, 3980, 4980) will normally be completed during the Summer Terms following years 2, 3, and 4 respectively. (Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)



**4.9.2.11 Mathematics - Statistics Joint Honours Program**

**4.9.2.11 Mathematics - Statistics Joint Honours Program**

The departments of Statistics and Mathematics offer a joint Honours program for students wishing in depth study in Statistics and Mathematics.

**To enter** the Honours program students must have satisfied the Faculty of Science requirements for entry to the program, and have completed STAT 1000, MATH 1300 and either MATH 1690, or MATH 1500 and MATH 1700 or any equivalent with a minimum grade of "B" in each of STAT 1000 and MATH 1690 (or a "B" average in MATH 1500 and MATH 1700).

**To graduate** with the B. Sc. Honours degree, a student must achieve a minimum DGPA of 3.00 and a minimum grade of "C+" in each of the Honours Program Specific courses, and a minimum grade of "C" on all remaining courses that contribute to the 120 credit hours of the degree. See the Calendar entry for each of the Department of Statistics and the Department of Mathematics for the Honours Program Specific courses.

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS 120 CREDIT HOURS</b> (comprising courses listed in chart below, and electives)			
MATH 1300 <sup>1</sup> (B), MATH 1690 (6) (B) (or MATH 1500 <sup>1</sup> and MATH 1700 <sup>1</sup> (B))	STAT 2000 <sup>2</sup> , STAT 2400  MATH 2202, MATH 2352 (6), MATH 2600, MATH 2750 (6), MATH 2800	STAT 3050, STAT 3470, STAT 3480, STAT 3400, STAT 3800	STAT 4100, STAT 4520, STAT 4530
The following courses must be taken in Year 1 or Year 2:  STAT 1000 (B), COMP 1010  6 credit hours from the Faculty of Arts, which should include the required "W" course  12 credit hours of approved electives		Plus a total of 30 credit hours from: MATH 2400 and any 3000 / 4000 level Mathematics courses, which must include at least 3 credit hours at the 4000 level and must also include MATH 3230, MATH 3740 (6)(or MATH 3760 (6)), MATH 3350 (6) (or MATH 3300), MATH 3700 (or MATH 3710), MATH 3400 and MATH 3800  6 credit hours of approved electives	
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

1 MATH 1310 may be taken in place of MATH 1300; MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700.  
2 STAT 2000 may be taken in Year 1.  
(Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

**4.9.3 Mathematics -0 Level**

**MATH 0500** *Preparing for University Mathematics Cr.Hrs.0*

A voluntary non-credit mathematics course for students, holding credit in Pre-Calculus 40S or Applied Mathematics 40S or equivalent, who would benefit from improving their knowledge and skills concerning topics included in the Manitoba secondary school mathematics curriculum. This course may be taken prior to or concurrently with MATH 1200, 1210, 1300, 1310, 1500, 1510, 1520, 1700, 1710 or 1690. Students participating in this course should purchase the set of notes "Preparing for University Mathematics" from the University of Manitoba Bookstore. **Prerequisite:** a grade of 60% in Pre-Calculus 40S, 70% in Applied Mathematics 40S or a grade of 60% or better in the Math Skills course offered by Extended Education. (NOTE: The fee for this course is non-refundable upon withdrawal).

**4.9.3 Mathematics -1000 Level**

**MATH 1010** *Applied Finite Mathematics Cr.Hrs.3*

(Lab Required) (Formerly 136.101) For students needing to fill the requirement of a university level mathematics course. Introduces students to modern applications of discrete

mathematics. Topics include: mathematics of finance, linear programming, graph theory, and game theory. This is a terminal course and may not be used as a prerequisite for other Mathematics courses. This course cannot be used as part of an Honours, Major, General or Minor program in the mathematical sciences. Not available to any student already holding a grade of "C" or better in any Mathematics course with the exception of MATH 1020 (136.102), FA 1020 (054.102), MATH 1190, MATH 1191 (136.119). Not to be taken concurrently with any other Mathematics course with the exception of MATH 1020, FA 1020, MATH 1190, or MATH 1191. No prerequisite.

**MATH 1020** *Mathematics in Art Cr.Hrs.3*

(Formerly 136.102) Specific theory, structuring systems, and mathematical methods and principles used in works of art from various historical periods and contexts will be explored in relation to Euclidean and non-Euclidean geometries. Topics include: linear perspective; shapes, patterns, balance and symmetry; ratio, proportion and harmony; and order, dynamics, and chaos. The course will be one half art and one half mathematics, team-taught by faculty from the School of Art and the Department of Mathematics. This course is also given in the School of Art as FA 1020. This is a terminal course and may not be used as a prerequisite for



other Mathematics courses. This course cannot be used as part of an Honours, Major, General or Minor program in the mathematical sciences. Not available to any student already holding a grade of "C" or better in any Mathematics course with the exception of MATH 1010 (136.101), MATH 1190, MATH 1191 (136.119). Not to be taken concurrently with any other Mathematics course with the exception of MATH 1010, MATH 1190, or MATH 1191. Not to be held with FA 1020 (054.102). No prerequisite.

**MATH 1190** Topics in Mathematics Cr.Hrs.6

(Formerly 136.119) This course is designed to give students in various faculties a measure of insight into modern mathematics. Topics are taken from number systems, geometry, and combinatorics. This is a terminal course and may not be used as a prerequisite for other Mathematics courses. This course cannot be used as part of an Honours, Major, General or Minor program in the mathematical sciences. May not hold with MATH 1191. Not available to any student already holding a grade of "C" or better in any Mathematics course with the exception of MATH 1010 (136.101), MATH 1020 (136.102), or FA 1020 (054.102). Not to be taken concurrently with any other Mathematics course with the exception of MATH 1010, MATH 1020, or FA 1020. No prerequisite.

**MATH 1200** Elements of Discrete Mathematics Cr.Hrs.3

(Lab Required) (Formerly 136.120) Sequences and series, trigonometry, complex numbers, algebra of polynomials, approximation of zeros of functions, linear difference equations. Not to be held with MATH 1210, or MATH 1201. Not available to any student holding credit in any Mathematics course numbered 2000 or higher, unless MATH 1200 is a required course in a student's program. Prerequisite: a minimum grade of 60% in Pre-calculus 40S or the former Mathematics 40S (300), or a grade of 60% or better in the Mathematical Skills course taught by Extended Education.

**MATH 1210** Techniques of Classical and Linear Algebra Cr.Hrs.3

(Lab Required) To introduce a variety of practical algebraic concepts and skills necessary for the study of calculus and advanced engineering mathematics. The emphasis of this course is in the development of methodology and algebraic skill necessary for successful completion of subsequent engineering mathematics courses. This course is intended for Engineering and Geophysics students only. Not to be held with MATH 1200 (136.120), MATH 1201, MATH 1300 (136.130), MATH 1301, or MATH 1310 (136.131). Prerequisites: a minimum grade of 60% in Pre-calculus Mathematics 40S or the former Mathematics 40S (300), or a grade of 60% or better in the Mathematical Skills course taught by Extended Education.

**MATH 1300** Vector Geometry and Linear Algebra Cr.Hrs.3

(Lab Required) (Formerly 136.130) An introduction to vectors, matrices, systems of linear equations and three-dimensional geometry. Not to be held for credit with MATH 1210, MATH 1310 (136.131), MATH 1301, or the former MATH 1680 (136.168). Prerequisite: a minimum grade of 60% in Pre-calculus Mathematics 40S or the former Mathematics 40S (300), or a grade of 60% or better in the Mathematical Skills course taught by Extended Education. NOTE: A minimum grade of 70% in Applied Mathematics 40S may be used as a prerequisite to this course.

**MATH 1310** Matrices for Management and Social Sciences Cr.Hrs.3

(Lab Required) (Formerly 136.131) Matrix methods with examples relevant to the Management and Social Sciences. Topics include vectors, matrices, systems of linear equations, and determinants; applications include economic models, the simplex method for linear programming, Markov chains, and game theory. Not to be held with MATH 1210, MATH 1300 (136.130), MATH 1301, or the former MATH 1680 (136.168). Prerequisite: a minimum grade of 60% in Pre-calculus Mathematics 40S or the former Mathematics 40S (300), or a grade of 60% or better in the Mathematical Skills course taught by Extended Education. NOTE: A minimum grade of 70% in Applied Mathematics 40S may be used as a prerequisite to this course.

**MATH 1500** Introduction to Calculus Cr.Hrs.3

(Lab Required) (Formerly 136.150) Differentiation and integration of elementary functions, with applications to maxima and minima, rates of change, area, and volume. Not to be held with MATH 1501, MATH 1510 (136.151), MATH 1520 (136.152), the former 136.153, the former MATH 1680 (136.168), or MATH 1690 (136.169). Prerequisite: a minimum grade of 60% in Pre-calculus Mathematics 40S or the former Mathematics 40S (300), or a grade of 60% or better in the Mathematical Skills course taught by Extended Education.

**MATH 1510** Applied Calculus 1 Cr.Hrs.3

(Lab Required) (Formerly 136.151) Functions and graphs; limits and continuity; differentiation of functions defined explicitly, implicitly and parametrically; applications of derivatives to velocity and acceleration, related rates, maxima and minima; differentials, indefinite and definite integrals, application of integration to area. Physical applications in this course make it especially suitable for students intending to take programs in engineering. Not to be held with MATH 1500, MATH 1501 (136.150), MATH 1520 (136.152), the former 136.153, the former MATH 1680 (136.168), or MATH 1690 (136.169). Prerequisite: a minimum grade of 60% in Pre-calculus Mathematics 40S or the former Mathematics 40S (300), or a grade of 60% or better in the Mathematical Skills course taught by Extended Education; and Physics 40S (300) or a "P" in PHYS 0900 (016.090).

**MATH 1520** Introductory Calculus for Management and Social Sciences Cr.Hrs.3

(Lab Required) (Formerly 136.152) Differentiation and integration of functions of one variable and partial differentiation of functions of several variables. Emphasizes applications in the areas of management and social science. Not to be held with MATH 1500, MATH 1501 (136.150), MATH 1510 (136.151), the former 136.153, the former MATH 1680 (136.168), or MATH 1690 (136.169). Prerequisite: a minimum grade of 60% in Pre-calculus Mathematics 40S or the former Mathematics 40S (300), or a minimum grade of 60% in the Mathematical Skills course taught by Extended Education.

**MATH 1690** Calculus Cr.Hrs.6

(Lab Required) (Formerly 136.169) An introduction to the calculus of functions of one variable. This course covers the same material as MATH 1500 (136.150) and MATH 1700 (136.170) together, but in greater depth. Exposure to high school calculus (45S) is desirable, but not essential. This course is mathematically challenging and is intended for



students planning to enter an Honours or 4 year Major program in Mathematics. Not to be held with MATH 1500, MATH 1501 (136.150), MATH 1510 (136.151), MATH 1520 (136.152), the former 136.153, the former MATH 1680 (136.168), MATH 1700, MATH 1701 (136.170), MATH 1710 (136.171), or the former 136.173. Prerequisite: a minimum grade of 80 % in Pre-calculus Mathematics 40S or the former Mathematics 40S (300).

**MATH 1700** Calculus 2 Cr.Hrs.3

(Lab Required) (Formerly 136.170) Theory and techniques of integration, curve sketching, volume, arc length, surface area and partial derivatives. Not to be held with MATH 1690 (136.169), MATH 1701, MATH 1710 (136.171), or the former 136.173. Prerequisite: A grade of "C" or better in one of MATH 1500, MATH 1501 (136.150), MATH 1510 (136.151), MATH 1520 (136.152), the former 136.153, or the former MATH 1680 (136.168).

**MATH 1710** Applied Calculus 2 Cr.Hrs.3

(Lab Required) (Formerly 136.171) Applications of integration to volumes, centres of mass, moments of inertia, work and fluid pressure; differentiation of trigonometric, inverse trigonometric, exponential, and logarithmic functions; techniques of integration; polar coordinates. Physical applications in this course make it especially suitable for students intending to take programs in engineering. Not to be held with MATH 1690 (136.169), MATH 1700 (136.170), MATH 1701, or the former 136.173. Prerequisite: A grade of "C" or better in one of MATH 1500 (136.150), MATH 1501, MATH 1510 (136.151), MATH 1520 (136.152), the former 136.153, or the former MATH 1680 (136.168). Prerequisite or concurrent Requirement: PHYS 1050 or PHYS 1051.

#### 4.9.3 Mathematics -2000 Level

**MATH 2120** Introductory Numerical Methods for Engineers Cr.Hrs.4

(Lab Required) (Formerly 136.212) Numerical methods applied to problems in engineering; roots of nonlinear equations and systems of linear equations, numerical differentiation and integration, initial-value problems. For Engineering and Geophysics students only. Not to be held with MATH 2600 (136.260) or MATH 2601. Prerequisites: one of COMP 1010, COMP 1011 (074.101), the former 074.111, or the former 074.112 (C); and MATH 2132 or the former MATH 2100 (136.210) (C).

**MATH 2130** Engineering Mathematical Analysis 1 Cr.Hrs.3

(Lab required) Multivariable differential and integral calculus up to and including multiple integrals in cylindrical and spherical coordinates. For Engineering and Geophysics students only. This course may not be held for credit with MATH 2720 (136.272, 136.270), MATH 2750 (136.275), or the former MATH 2110 (136.211). Prerequisites: MATH 1210 and MATH 1710 (136.171) (C).

**MATH 2132** Engineering Mathematical Analysis 2 Cr.Hrs.3

(Lab required) Infinite series, Taylor and Maclaurin Series; ordinary differential equations including Laplace transforms. For Engineering and Geophysics students only. This course may not be held for credit with MATH 2800 (136.280), MATH 2730 (136.273, 136.271), or the former MATH 2100 (136.210). Prerequisites: MATH 1210 (C) and MATH 1710 (136.171) (C).

**MATH 2202** Fundamentals of Mathematical Analysis Cr.Hrs.3

(Formerly MATH 2200) The language of mathematics: logic, methods of proof, elementary set theory. Foundations of calculus: the real numbers, continuity. This course is mathematically challenging and is intended primarily for students registered in Honours, Joint Honours or the Four-Year Major program. Registration for this course requires approval of the department. Not to be held with the former MATH 2200 (136.220). Prerequisites: a grade of C+ or better in one of MATH 1300, MATH 1301 (136.130), or MATH 1310 (136.131); and a grade of C+ or better in one of MATH 1690 (136.169), MATH 1700, MATH 1701 (136.170), or MATH 1710 (136.171).

**MATH 2300** Linear Algebra 2 Cr.Hrs.3

(Formerly 136.230) A continuation of MATH 1300 or MATH 1310. Finite dimensional vector spaces; linear transformation and matrices; eigenvalues and eigenvectors; diagonalization and applications; inner product spaces. Not to be held with MATH 2301, MATH 2352, the former MATH 2350 (136.235), or MATH 3130 (136.313). Prerequisites: a grade of "C" or better in one of MATH 1300, MATH 1301 (136.130), or MATH 1310 (136.131); and a grade of "C" or better in one of MATH 1500, MATH 1501 (136.150), MATH 1510 (136.151), MATH 1520 (136.152), the former 136.153, or MATH 1690 (136.169).

**MATH 2352** Advanced Linear Algebra Cr.Hrs.6

(Formerly MATH 2350 or 136.235) Vector spaces, linear transformations, inner product spaces, eigenvalues and eigenvectors, orthogonal and Hermitian matrices, and applications. This course is mathematically challenging and is intended primarily for students registered in Honours, Joint Honours or the Four-Year Major program. Registration in this course requires approval of the department. Not to be held with MATH 2300, MATH 2301 (136.230), the former MATH 2350 (136.235), or MATH 3130 (136.313). Prerequisites: a grade of "C+" or better in one of MATH 1300, MATH 1301 (136.130), or MATH 1310 (136.131); and a grade of "C+" or better in one of MATH 1690 (136.169), MATH 1700, MATH 1701 (136.170), MATH 1710 (136.171), or the former 136.173.

**MATH 2400** Applied Graph Theory Cr.Hrs.3

(Formerly 136.240) Graphs, planar graphs, directed graphs. Applications such as scheduling, assignments, timetabling, tournaments, networks with algorithms. Prerequisite: one of MATH 1300 (C), MATH 1301(136.130) (C) or MATH 1310 (136.131) (C). Not available to students already holding credit for, or are currently registered in COMP 4340 (074.434).

**MATH 2450** Combinatorial Mathematics Cr.Hrs.6

(Formerly 136.245) An introduction to several areas of current interest in combinatorial mathematics, including techniques of enumeration, graphs, block designs and generalizations, linear recursions. This course is not normally offered every year. May not hold with MATH 2451. Prerequisite: An average of "C" or better in six credit hours of Year 1 Math courses with the exception of the former 136.100, MATH 1010 (136.101), MATH 1020 (136.102), FA 1020 (054.102), MATH 1190 (136.119), or MATH 1191; or consent of department.

**MATH 2500** Introduction to Number Theory Cr.Hrs.3

(Formerly 136.250) Topics may include divisibility, unique



factorization, linear and quadratic congruences, Fermat's theorem. This course may not be held with MATH 2501. Prerequisite: An average of "C" or better in six credit hours of Year 1 Mathematics courses with the exception of the former 136.100, MATH 1010 (136.101), MATH 1020 (136.102), FA 1020 (054.102), MATH 1190 (136.119) and MATH 1191; or consent of department.

**MATH 2552** Geometry of the Plane Cr.Hrs.6

A modern approach to geometry through the use of geometric transformations. Topics may include isometries, symmetries, similarities, circular inversion and groups. Not to be held with MATH 2551 or the former MATH 2550 (136.255). Prerequisites: MATH 1690 (136.169) (C); or a grade of "C" or better in one of MATH 1500 (136.150), MATH 1501, MATH 1510 (136.151), MATH 1520 (136.152), or the former 136.153, and a grade of "C" or better one of MATH 1300 (136.130), MATH 1301, MATH 1310 (136.131), MATH 1700 (136.170), MATH 1701, MATH 1710 (136.171), or the former 136.173.

**MATH 2600** Numerical Mathematics 1 Cr.Hrs.3

(Formerly 136.260) Elementary techniques of numerical solution of mathematical problems: solution of equations, finite differences, interpolation, systems of equations, numerical differentiation and integration. This course may not be held for credit with MATH 2120 (136.212) or MATH 2601. Prerequisites: One of MATH 1300 (136.130), MATH 1301, or MATH 1310 (136.131) (C); and one of MATH 1690 (136.169), MATH 1700 (136.170), MATH 1701, MATH 1710 (136.171), or the former 136.173 (C); and COMP 1010 (074.101) or COMP 1011 (C); or consent of instructor.

**MATH 2720** Multivariable Calculus Cr.Hrs.3

(Formerly 136.272) Calculus of several variables. Not to be held with MATH 2721 (136.272, 136.270), MATH 2750 (136.275), the former MATH 2110 (136.211), or MATH 2130. Prerequisites: A grade of "C" or better in one of MATH 1300 (136.130), MATH 1301, or MATH 1310 (136.131) (C); and a grade of "C" or better in one of MATH 1690 (136.169), MATH 1700 (136.170), MATH 1701, MATH 1710 (136.171), or the former 136.173.

**MATH 2730** Sequences and Series Cr.Hrs.3

(Formerly 136.273) Introductory analysis, sequences and series. Not to be held with MATH 2132, the former MATH 2100 (136.210), MATH 2731 (136.273, 136.271), MATH 2750 (136.275). Prerequisite: a grade of "C" or better in one of MATH 1690 (136.169), MATH 1700, MATH 1701 (136.170), MATH 1710 (136.171) or the former 136.173. Prerequisite or concurrent requirement: one of MATH 1300 (136.130), MATH 1301, or MATH 1310 (136.131).

**MATH 2750** Intermediate Calculus Cr.Hrs.6

(Formerly 136.275) Sequences, series and power series. Differentiation and integration of real-valued functions of several real variables. Not to be held with MATH 2130, MATH 2132, the former MATH 2100 (136.210), the former MATH 2110 (136.211), MATH 2701, MATH 2720, MATH 2721 (136.272, 136.270), MATH 2730, MATH 2731 (136.273, 136.271). This course is mathematically challenging and is intended primarily for students registered in an Honours, Joint Honours or Four-Year Major program. Registration in this course requires approval of the department. Prerequisites: a grade of "C+" or better in one of MATH 1300, MATH 1301 (136.130), or MATH 1310 (136.131); and a grade of "C+" or better in one of MATH

1690 (136.169), MATH 1700, MATH 1701 (136.170), MATH 1710 (136.171), or the former 136.173.

**MATH 2800** Ordinary Differential Equations with Applications 1 Cr.Hrs.3

(Formerly 136.280) An introduction to the theory of ordinary differential equations, and practical techniques of solution, principally relating to first order and linear higher order equations; linear systems. Applications to problems in science and other selected areas. Not to be held with MATH 2801 (136.280), MATH 2132, or the former MATH 2100 (136.210). Prerequisite: a grade of "C" or better in MATH 1300, MATH 1301 (136.130), or MATH 1310 (136.131) (C). Prerequisite or concurrent requirement: MATH 2720, MATH 2721 or MATH 2750.

### 4.9.3 Mathematics -3000 Level

**MATH 3120** Applied Discrete Mathematics Cr.Hrs.3

(Lab Required) (Formerly 136.312) Sets, groups, graphs, and Boolean algebra. For Engineering students only. Not to be held with COMP 2130 (074.213), or the former 074.212. Prerequisites: ECE 2220 (C) and MATH 2130 (C).

**MATH 3130** Linear Spaces for Physicists Cr.Hrs.3

(Formerly 136.313) A course intended for honours/major students in Physics. Review of linear algebra (MATH 1300) vector spaces; linear transformations; eigenvalues and eigenvectors; inner product spaces; additional topics as time permits. Not to be held with MATH 2300, MATH 2301 (136.230), MATH 2352, or the former MATH 2350 (136.235). Prerequisites: MATH 2750 (136.275) (C); or both of MATH 2720 (or equivalent - MATH 2721, 136.270, 136.272) (C) and PHYS 2490 (or the former 016.237) (C).

**MATH 3132** Engineering Mathematical Analysis Cr.Hrs.3

Vector integral calculus; series of Ordinary differential equations; Fourier series and Partial differential equations. For Engineering and Geophysics students only. Not to be held with MATH 3740 (136.374), MATH 3800 (136.380), or the former MATH 3100 (136.310). Prerequisites: MATH 2130 (C) and MATH 2132 (C).

**MATH 3142** Engineering Mathematical Analysis 4 Cr.Hrs.3

Introduction to discrete mathematics; systems of linear differential equations; complex function theory and applications. For Engineering and Geophysics students only. Not to be held with MATH 3110 (136.311), MATH 3700 (136.370), MATH 3710 (136.371), or MATH 3800 (136.380). Prerequisites: MATH 2130 (C); and MATH 2132 or the former MATH 2110 (136.211) (C). NOTE: MATH 3132 is highly recommended.

**MATH 3220** Set Theory Cr.Hrs.3

(Formerly 136.322) Axiom systems, cardinal and ordinal numbers, models of set theory, the axiom of choice, the generalized continuum hypothesis, etc. Not currently offered. Prerequisite: MATH 2202 or the former MATH 2200 (136.220) (C); or consent of department.

**MATH 3230** Metric Spaces Cr.Hrs.3

(Formerly 136.323) Definition of metric spaces; examples. Compactness, connectedness and continuity in metric spaces. Applications to analysis. Not to be held with MATH 3210 (136.321) Prerequisites: MATH 2750 (136.275) (C); and MATH 2202 or the former MATH 2200 (136.220) (C); or



consent of department.

**MATH 3240** Topology 1 Cr.Hrs.3

(Formerly 136.324) Topics include topologies, continuity, connectedness, compactness, and separation properties. Not to be held with MATH 3210 (136.321). Prerequisite: MATH 3230 (136.323) (C) or consent of department.

**MATH 3300** Modern Algebra 1 Cr.Hrs.3

(Formerly 136.330) Introduction to the concepts and structures of modern algebra, including groups, rings and fields; substructure, isomorphism, quotients. Not to be held with MATH 3350 (136.335). Prerequisites: one of MATH 2300 (C), MATH 2301 (136.230) (C), MATH 2352 (C), or the former MATH 2350 (136.235) (C); and an additional 6 credit hours of 2000 level mathematics courses; or consent of department.

**MATH 3310** Modern Algebra 2 Cr.Hrs.3

(Formerly 136.331) Continuation of MATH 3300. Further study of rings and fields: integral domains, polynomial rings; ideals and quotient rings; rational function fields. Lattices and Boolean algebras may be included. Not to be held with MATH 3350 (136.335). Prerequisite: MATH 3300 (136.330) (C).

**MATH 3350** Advanced Algebra Cr.Hrs.6

(Formerly 136.335) An introduction to abstract algebra with topics taken from among the theories of groups, rings, modules, fields and lattices. This course is taught at an Honours/Major level. Not to be held with MATH 3300 (136.330) or MATH 3310 (136.331). Prerequisites: MATH 2352 or the former MATH 2350 (136.235) (C); and MATH 2202 or the former MATH 2200 (136.220) (C); or consent of department.

**MATH 3400** Combinatorics 1 Cr.Hrs.3

(Formerly 136.340) Basic counting principles, pigeon-hole principle, recursion, graphs. This course is taught at an Honours/Major level. Prerequisites: MATH 2202 or the former MATH 2200 (136.220) (C); and MATH 2352 or the former MATH 2350 (136.235) (C); or consent of department.

**MATH 3430** Modern Geometry Cr.Hrs.3

(Formerly 136.343) Topics in modern euclidean geometry, affine and projective geometry, inverse geometry, etc. This course is taught at an Honours/Major level. Prerequisites: MATH 2750 (136.275) (C); and MATH 2352 or the former MATH 2350 (136.235) (C); or consent of department.

**MATH 3450** Theory of Numbers Cr.Hrs.6

(Formerly 136.345) Divisibility, congruences; quadratic residues and reciprocity; introduction to analytic and algebraic number theory. Prerequisites: MATH 2750 (136.275) (C); and MATH 2202 or the former MATH 2200 (136.220) (C); or consent of department.

**MATH 3530** Mathematical Problems in the Biological Sciences Cr.Hrs.3

(Formerly 136.353) Circulatory system, flow of blood. Enzyme kinetics. Cell populations. Diffusion in biology. Some ecological systems. Prerequisites: MATH 2300 or MATH 2301 (136.230) (C); and MATH 2730 (136.273) (C); and MATH 3800 (136.380) (C); or consent of department.

**MATH 3600** Numerical Mathematics 2 Cr.Hrs.3

(Formerly 136.360) Numerical differentiation and Gaussian

quadrature; curve-fitting by splines; numerical methods for initial-value problems, boundary-value problems, and transforms; problems involving large, sparse or ill-conditioned linear systems. Not to be held with MATH 3601 (136.360). Prerequisites: MATH 2600 or MATH 2601 (136.260) (C); MATH 2800 or MATH 2801 (136.280) (C); MATH 2720 or MATH 2721 (136.272, 136.270) (C) and MATH 2730 (MATH 2731, 136.273, 136.271) (C), or MATH 2750 (136.275) (C); and either COMP 1010 or COMP 1011 (074.101) (C); or consent of department.

**MATH 3700** Applied Complex Analysis Cr.Hrs.3

(Formerly 136.370) Concepts and techniques of complex variable theory in the context of applied mathematics. Not to be held with MATH 3142, the former MATH 3110 (136.311), or MATH 3710 (136.371). Prerequisites: MATH 2720 or MATH 2721 (136.272, 136.270) (C); and one of MATH 2730, MATH 2731 (136.273, 136.271) (C), MATH 2750 (136.275) (C), or PHYS 2490 (016.237) (C); or consent of department.

**MATH 3710** Complex Analysis 1 Cr.Hrs.3

(Formerly 136.371) The geometry of the complex plane, analytic functions, contour integration. Cauchy's theorem and formula, the residue theorem, etc. Not to be held with MATH 3142, the former MATH 3110 (136.311), or MATH 3700 (136.370) Prerequisite: MATH 3230 (136.323).

**MATH 3740** Methods of Advanced Calculus Cr.Hrs.6

(Formerly 136.374) Uniform convergence of series and integrals. Transformations, inverse and implicit function theorems. Vector analysis including Green's and Stokes theorems. Not to be held with MATH 3760 (136.376). Prerequisites: MATH 2300 or MATH 2301 (136.230) (C); MATH 2720 or MATH 2721 (136.272, 136.270) (C); MATH 2730 or MATH 2731 (136.273, 136.271) (C); or consent of department.

**MATH 3760** Advanced Calculus Cr.Hrs.6

(Formerly 136.376) Vector analysis; The Riemann and Riemann-Stieltjes integral, uniform convergence of series and integrals, power series and Fourier series. This course is taught at an Honours/Major level. Not to be held with MATH 3740 (136.375). Prerequisites: MATH 2750 (136.275) (C); and MATH 2352 or the former MATH 2350 (136.235) (C); and MATH 2202 or the former MATH 2200 (136.220) (C); or consent of department.

**MATH 3800** Ordinary Differential Equations with Applications 2 Cr.Hrs.3

(Formerly 136.380) Laplace transforms, series solutions of ODEs, systems of linear ODEs, applications, introduction to dynamical systems. Prerequisite: MATH 2800 or MATH 2801 (136.280) (C); and one of MATH 2730 (136.273, 136.271), MATH 2731, or MATH 2750 (136.275) (C).

**MATH 3810** Partial Differential Equations 1 Cr.Hrs.3

(Formerly 136.381) Fourier series and introductory Sturm-Liouville theory. Derivation of wave, diffusion and Laplace equations. Solution by separation of variables. Prerequisites: MATH 2720 or MATH 2721 (136.272, 136.270) (C) and MATH 2730 or MATH 2731 (136.273, 136.271) (C), or MATH 2750 (136.275) (C); and MATH 2800 or MATH 2801 (C); or consent of department.

**MATH 3820** Introduction to Mathematical Modelling Cr.Hrs.3

(Formerly 136.382) An introduction to the principles and



techniques involved in the design, development, solution, testing and revision of mathematical models of "real-world" phenomena illustrated through the discussion of case studies. Prerequisites: MATH 2600 or MATH 2601 (136.260) (C); and MATH 2800 or MATH 2801 (136.280) (C). Prerequisite or concurrent requirement: STAT 1000 or STAT 1001.

#### 4.9.3 Mathematics -4000 Level

##### **MATH 4200** Topology 2 Cr.Hrs.3

(Formerly 136.420) Topics include Tychonoff spaces, ordered spaces, arbitrary products, the Stone-Cech compactification, various types of disconnectedness, generalizations of compactness, paracompactness, and introductory homotopy theory. Prerequisite: MATH 3240 (136.324) (C).

##### **MATH 4230** Algebraic Topology Cr.Hrs.3

(Formerly 136.423) An introduction to Algebraic Topology. Topics include basic homotopy theory, fundamental groups of topological spaces, free groups and group presentations, classification of low dimensional manifolds, Seifert-Van Kampen theorem, covering spaces and homology theory. Prerequisite: MATH 3240 (136.324) (this course may be taken concurrently with the consent of the department) (C); and MATH 3300 (136.330) (or MATH 3350 may be taken concurrently in place of MATH 3300) (C).

##### **MATH 4250** Mathematical Logic Cr.Hrs.6

(Formerly 136.425) The mathematical study of propositional and predicate logic; proof theory. Introduction to model theory (completeness, compactness, Lowenheim-Skolem theorems). Recursion theory, undecidability, incompleteness. Prerequisite: MATH 3350 (136.335) (C) or consent of department.

##### **MATH 4310** Applied Matrix Analysis Cr.Hrs.3

Vector and matrix norms; LU, QR, Schur, and singular value decompositions; projections; least squares; Gerschgorin theorem, perturbation theory; positive definite systems; quadratic forms; pseudoinverse; diagonalization; canonical forms; function of matrices; minimal polynomials; Perron-Frobenius theory; and applications. Not to be held with MATH 3500 (136.350). Prerequisite: A grade of "C" or better in one of MATH 2300, MATH 2301 (136.230), MATH 2352, or the former MATH 2350 (136.235).

##### **MATH 4350** Modern Algebra Cr.Hrs.6

(Formerly 136.435) A continuation of the topics of MATH 3350, and an introduction to such further topics as category theory, universal algebra, multilinear algebra, and homological algebra. Prerequisite: MATH 3350 (136.335) (C).

##### **MATH 4400** Combinatorics 2 Cr.Hrs.3

(Formerly 136.440) Generating functions, combinatorial geometry, symbolic dynamics, forbidden configurations, topics from combinatorial matrix theory. Prerequisites: MATH 2750 (136.275) (C), MATH 3400 (136.340) (C), and MATH 3350 (136.335) (C).

##### **MATH 4410** Graphs, Codes and Designs Cr.Hrs.3

(Formerly 136.441) Graph decompositions, colourings, and applications, adjacency matrices, triple systems and generalizations, BIBD's, orthogonal designs, linear codes,

Hamming codes, error-correction codes, public key cryptography, secret sharing. Prerequisites: MATH 3400 (136.340) (C) and MATH 3350 (136.335) (C).

##### **MATH 4420** Finite Geometry Cr.Hrs.3

(Formerly 136.442) Finite fields, finite affine and projective planes, partial geometries and related configurations. Prerequisite: MATH 3350 (136.335) (C) and MATH 3400 (136.340) (C).

##### **MATH 4430** Introduction to Elliptic Curves Cr.Hrs.3

(Formerly 136.443) Homogeneous coordinates, non-singular cubic curves, cubic curves of finite fields. Prerequisites: MATH 2500 or MATH 2501 (136.250) (C); and MATH 2352 or the former MATH 2350 (136.235) (C); and either MATH 3300 (136.330) (C) and MATH 3310 (136.331) (C), or MATH 3350 (136.335) (C).

##### **MATH 4610** Introduction to Finite Elements and Boundary Elements Cr.Hrs.3

(Formerly 136.461) Introduction to finite element and boundary element techniques for solving partial differential equations. Prerequisites: MATH 3600 (136.360) (C); and either MATH 3740 (136.375) (C) or MATH 3760 (136.376) (C).

##### **MATH 4700** Applied Functional Analysis Cr.Hrs.3

(Formerly 136.470) Elements of metric, normed and inner product spaces; operators and inverses; applications in analysis and numerical analysis. Prerequisite: MATH 3740 (136.375) or MATH 3760 (136.376) (C).

##### **MATH 4710** Complex Analysis 2 Cr.Hrs.3

(Formerly 136.471) Conformal mappings, space of analytic functions, space of meromorphic functions, harmonic functions. Prerequisites: MATH 3240 (136.324) (C), MATH 3710 (136.371) (C), and MATH 3760 (136.376) (C).

##### **MATH 4730** Tensor and Variational Calculus Cr.Hrs.3

(Formerly 136.473) An introduction to tensor calculus, differential forms, and variational principles on differentiable and Riemannian manifolds. Prerequisites: six credit hours of 2000 level calculus; and MATH 2800 or MATH 2801 (136.280) (C); or consent of department. Prerequisite or concurrent requirement: MATH 3740 (136.375) or MATH 3760 (136.376).

##### **MATH 4750** Real Variables Cr.Hrs.6

(Formerly 136.475) Measure and integration on the real line and on abstract spaces. Classical Banach spaces of functions, and basic functional analysis. Prerequisites: MATH 2352 or the former MATH 2350 (136.235) (C); and MATH 3230 (136.323) (C); and MATH 3760 (136.376) (C); or consent of department.

##### **MATH 4800** Dynamical Systems: Theory and Applications Cr.Hrs.3

(Formerly 136.480) Systems of differential equations, linear systems, applied dynamics, phase space, stability, introduction to chaos. Prerequisites: MATH 3600 or MATH 3601 (136.360) (C) and MATH 3800 (136.380) (C).

##### **MATH 4810** Partial Differential Equations 2 Cr.Hrs.3

(Formerly 136.481) Partial differential equations and their classification. Special functions and generalized Eigen function expansions. Solution by separation of variables, and transform methods. Prerequisite: MATH 3800 (136.380) and



MATH 3810 (136.381) (C).

**MATH 4910** Project Course in Mathematics Cr.Hrs.3  
A research project by the student in consultation with the department head and an appropriate supervising Faculty member. A written report will be required to be submitted by the end of the term. An oral examination may be required. This course is restricted to students in the fourth year of the Honours or Major program in Mathematics and is not available to Graduate Students. This course may not be held for credit with MATH 4900. Prerequisite: Consent of Department.

**MATH 4920** Topics in Mathematics Cr.Hrs.3  
(Formerly 136.492) Topics of current interest in Mathematics or Applied Mathematics upon the interests and requirements of students and faculty, and will include specialized topics not available in regular course offerings. Prerequisite: consent of department.

## 4.10 Department of Microbiology

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### 4.10.1 Program Information

Microbiology is the study of microorganisms such as bacteria, viruses, fungi, protozoa, and algae, and their interactions with the environment. It is also an area of study that plays a pivotal role in understanding other life science disciplines, such as medicine, agriculture, ecology, and pharmacy. Studies in cloning, recombinant DNA technology, and gene sequencing are part of the program. The departments of Microbiology and Chemistry offer joint Honours programs (including Co-op) and joint Four Year Major programs (including Co-op) in biochemistry and biotechnology (See Sections 4.2 and 4.4).

The department must approve a student's Honours or Major program prior to registration in each session. Students must also obtain approval for any and all revisions to their program.

### Microbiology Prerequisite Information

Students are advised to take courses in the year suggested in the charts below; otherwise difficulties may arise with timetabling and prerequisite requirements. Students are responsible for all prerequisites and corequisites of the courses required or selected in all programs below. Since Chemistry courses form an integral part of all Microbiology programs, students should note that Grade 12 mathematics and chemistry are prerequisite to CHEM 1300.

### Honours Requirements and Options

**To enter** the Honours program in Microbiology, a student must have completed at least 24 credit hours with a minimum GPA of 3.00, and also obtained a minimum grade of "B" in MBIO 1010, and a minimum grade of "C+" in CHEM 1310. BIOL 1020, BIOL 1030, STAT 1000 and the 3 credit hours of specified Mathematics or Physics are program requirements and students are strongly encouraged to complete these courses in first year.

\* Students interested in studying Microbiology should note that Grade 12 mathematics and chemistry are prerequisite to CHEM 1300. Effective 2009-2010, students will also require Biology 40S (or equivalent) and any Grade 12 mathematics course (or equivalent) for entry to BIOL 1020 (the required prerequisite for BIOL 1030).

**To continue** in the Microbiology Honours program, students must maintain a minimum GPA of 3.00, and complete a minimum of 9 credit hours during each Fall and Winter Term.

**To graduate** from the Microbiology Honours program students must achieve a minimum GPA of 3.00 and obtain a minimum grade of "C" on the courses that make up the 120 credit hours of the degree.

Students who wish to elect CHEM 2280, CHEM 2290 or CHEM 2470 as options should note the prerequisites in making a choice of mathematics courses.

By careful choice of electives, programs may be selected giving emphasis to various areas of Microbiology, e.g., Biochemistry and Molecular Biology or Environmental and Ecological Microbiology. In choosing optional courses, students should be aware of any prerequisite requirements.

### Honours Cooperative Option

Students interested in alternating academic terms and terms of paid employment as part of their Honours Microbiology program may enter the Cooperative Option in April of their second year in Honours Microbiology. This program provides students with a minimum of 12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and university units.

The course and grade requirements **for entry** to this option are the same as those required for entry to the regular Honours program (see above), as indicated in the chart. Students are required to complete the first and second year requirements of the program; and MBIO 3010 and MBIO 3410 before they begin their first employment term. Students should refer to the general faculty regulations for B.Sc. (Honours) Co-operative Options in Section 3.6.

**To continue** in the Honours Co-operative program a student must maintain a minimum GPA of 3.00, successfully complete each work term, and complete a minimum of 9 credit hours during each academic term. Students should note that the grade requirements for the Co-operative Option



are the same as that for the regular Honours program (see above).

Students must check with the Co-op office for the April application deadline information. They will normally be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each employment term.

#### Four Year Major

**To enter** the Major Degree program in Microbiology, a student must have completed at least 24 credit hours with a minimum GPA of 2.00, and also obtained a minimum grade of "C+" in MBI0 1010, and a minimum grade of "C" in CHEM 1310. BIOL 1020, BIOL 1030, STAT 1000 and the 3 credit hours of specified Mathematics or Physics are program requirements and students are strongly urged to complete these courses in first year.

\* Students interested in studying Microbiology should note that Grade 12 mathematics and chemistry are prerequisite to CHEM 1300. Effective 2009-2010, students will also require Biology 40S (or equivalent) and any Grade 12 mathematics course (or equivalent) for entry to BIOL 1020 (the required prerequisite for BIOL 1030).

**To continue** in the Microbiology Major Degree, students must maintain a minimum GPA of 2.00.

**To graduate** from, the 4-year Major degree program in Microbiology, students are required to obtain a minimum GPA of 2.00 on the 120 credit hours that contribute to the degree.

Potential entrants to this program should also note the following:

Students who wish to elect CHEM 2280, CHEM 2290 or CHEM 2470 as options should note the prerequisites in making a choice of mathematics courses.

Chemistry CHEM 2210 must be taken before MBI0 2370 (CHEM 2370). Courses MBI0 2360 and CHEM 2360, and MBI0 2370 and CHEM 2370 are the same and credit cannot be held for both. Microbiology students will normally register in MBI0 2360 and MBI0 2370, but CHEM 2360 and CHEM

2370 will be regarded as equivalents in the four year Major program.

Students must note course and grade prerequisites when selecting 3000 and 4000 level Microbiology courses.

Microbiology MBI0 4530 is not available in this program.

By careful choice of electives, programs may be selected giving emphasis to various areas of Microbiology, e.g., Biochemistry and Molecular Biology or Environmental and Ecological Microbiology. In choosing optional courses, students should be aware of any prerequisite requirements.

The listed requirements are minimum requirements. Students are reminded that should they wish to take further courses in Microbiology, they are at liberty to do so within the degree regulations.

#### Four Year Major Cooperative Option

Students interested in alternating employment terms and academic terms as part of their Major program in Microbiology may enter the Co-operative Option in April of their second year in Microbiology. This program provides students with a minimum of 12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and University units.

The course and grade requirements for entry to this option are the same as those required for entry to the regular Major program. MBI0 3010 and MBI0 3410 are required in Year 3. Students are required to complete the first and second year requirements of the program and MBI0 3410 before they begin their first employment term. See the general faculty regulations for B.Sc. (Major) Cooperative Option in Section 3.4.

Students must check with the Co-op office for the April application deadline information. They will normally be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to determine and select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each employment term.

Option List for All Microbiology Programs:



*Biological Sciences:*

BIOL 2242 (BOTN 2010), BIOL 2260 (BOTN 2210), BIOL 2261, BIOL 2300 (BOTN 2370, ZOOL 2370), BIOL 2301 (BOTN 2371, ZOOL 2371), BIOL 2380 (BOTN 2180, ZOOL 2180), BIOL 2381, BIOL 2410 (ZOOL 2530), BIOL 2411 (ZOOL 2531), BIOL 2420 (ZOOL 2540), BIOL 2421 (ZOOL 2541), BIOL 2540 (ZOOL 2150), BIOL 3260 (BOTN 2290), BIOL 3290 (BOTN 3280), BIOL 3291, BIOL 3330 (BOTN 3250), BIOL 3370 (ZOOL 3500), BIOL 3450 (BOTN 2020), BIOL 3452 (BOTN 3010), BIOL 3460 (ZOOL 3530), BIOL 3462 (ZOOL 3540), BIOL 3470, BIOL 3472, BIOL 3500 (BOTN 3460), BIOL 3501, BIOL 3540 (ZOOL 3070), BIOL 3560 (ZOOL 3060), BIOL 3561, BIOL 4242 (BOTN 4130), BIOL 4244 (BOTN 4160), BIOL 4246 (BOTN 4050), BIOL 4250 (BOTN 4210), BIOL 4430 (BOTN 4120), BIOL 4480 (ZOOL 4600), BIOL 4540 (ZOOL 4150), BIOL 4542 (ZOOL 4270), BIOL 4560 (ZOOL 4140)

*Chemistry:*

CHEM 2280, CHEM 2290, CHEM 2380, CHEM 2400, CHEM 2470, CHEM 3390, CHEM 3590, CHEM 3570, CHEM 4590, CHEM 4360, CHEM 4370, CHEM 4620, CHEM 4630 CHEM 4670

*Environmental Science:* ENVR 2180

*Food Sciences:* FOOD 4150, FOOD 4280

*General Agriculture:* AGECE 2180, AGECE 2370

*Pharmacology:* PHAC 4030, PHAC 4040

*Statistics:* STAT 2000

**NOTE:** Other suitable options may be selected with permission of the department.

**Three Year General**

As prescribed with all other faculty regulations in Section 3.2, students in this program must select 18 credit hours of 2000, 3000 and (or) 4000 level courses from each of **two** Science areas. To satisfy the requirement in the area of Microbiology, students must take a minimum of 18 credit hours of Microbiology courses as prescribed in the chart below (subject to the Faculty requirement that of the 36 credit hours in the two advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level.).

Students wishing to elect courses in Microbiology in fulfillment of the requirements for the B.Sc. (General) degree should note the following:

- Students must obtain a grade of "C" or better in the following: MBIO 1010, BIOL 1020, BIOL 1030, CHEM 1300 and CHEM 1310.
- Students are encouraged to elect additional Microbiology courses above the required minimum.
- Microbiology MBIO 2770 and MBIO 2780 (CHEM 2770 and CHEM 2780) are not available in this program.

**Minor**

Students must complete MBIO 1010, CHEM 1300, CHEM 1310, BIOL 1020, BIOL 1030, plus 12 credit hours of Microbiology courses at the 2000 and (or) 3000 level.

**Biochemistry and Biotechnology Programs**

The Department of Microbiology, in conjunction with the Department of Chemistry, offers Joint Honours programs, Joint Honours Co-operative Option programs, Joint four year Major programs and Joint four year Major Cooperative Option programs in Biochemistry and Biotechnology. See Sections 4.2 Biochemistry Program and 4.4 Biotechnology Program for full details.

**4.10.2 Microbiology Program Charts**

4.10.2 Microbiology			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS 120 CREDIT HOURS</b>			
MBIO 1010 <sup>5</sup>  BIOL 1020, BIOL 1030  CHEM 1300, CHEM 1310	MBIO 2020, MBIO 2360 (CHEM 2360), MBIO 2370 (CHEM 2370)  BIOL 2500, BIOL 2520  CHEM 2210, CHEM 2220	MBIO 3010, MBIO 3030, MBIO 3280, MBIO 3410, MBIO 3470	MBIO 4010, MBIO 4440, MBIO 4480, MBIO 4530 (6), MBIO 4600, MBIO 4610
<b>In University 1 or Year 2 the following must be completed:</b>		15 credit hours of Microbiology courses <sup>3</sup>	



<p>3 credit hours of Mathematics or Physics chosen from: MATH 1200, MATH 1300<sup>1</sup>, MATH 1500<sup>1</sup>, PHYS 1020 or PHYS 1050</p> <p>STAT 1000</p> <p>6 credit hours from the Faculty of Arts, which should include the required "W" course.</p> <p>9 credit hours of approved electives</p> <p>3 credit hours from Microbiology or from the option list</p>		<p>9 credit hours chosen from Microbiology courses<sup>3</sup> or from the option list (see below)</p>	
30 Hours	30 Hours	30 Hours	30 Hours
<b>HONOURS COOPERATIVE OPTION 120 CREDIT HOURS</b>			
<p>MBIO 1010<sup>5</sup></p> <p>BIOL 1020, BIOL 1030</p> <p>CHEM 1300, CHEM 1310</p>	<p>MBIO 2020, MBIO 2360 (CHEM 2360), MBIO 2370 (CHEM 2370)</p> <p>BIOL 2500, BIOL 2520</p> <p>CHEM 2210, CHEM 2220</p>	<p>MBIO 3010, MBIO 3030, MBIO 3280, MBIO 3410, MBIO 3470</p>	<p>MBIO 4010, MBIO 4440, MBIO 4480, MBIO 4600, MBIO 4610</p>
<p><b>In University 1 or Year 2 the following must be completed:</b></p> <p>3 credit hours of Mathematics or Physics from MATH 1200, MATH 1300<sup>1</sup>, MATH 1500<sup>1</sup>, PHYS 1020 or PHYS 1050</p> <p>STAT 1000</p> <p>6 credit hours from the Faculty of Arts, which should include the required "W" course</p> <p>9 credit hours of approved electives</p> <p>3 credit hours chosen from Microbiology courses<sup>3</sup> or from the option list (see below)</p>		<p>21 credit hours of Microbiology courses<sup>3</sup></p> <p>9 credit hours chosen from Microbiology courses<sup>3</sup> or from the option list (see below)</p> <p><b>Work Terms:</b></p> <p>MBIO 3980, MBIO 3990, MBIO 4980 and/or MBIO 4990</p>	
30 Hours	30 Hours	30 Hours	30 Hours
<b>FOUR –YEAR MAJOR (Including Co-op)<sup>4</sup> 120 CREDIT HOURS</b>			
<p>MBIO 1010<sup>5</sup></p> <p>BIOL 1020, BIOL 1030</p> <p>CHEM 1300,</p>	<p>MBIO 2020, MBIO 2360 (CHEM 2360), MBIO 2370 (CHEM 2370)</p> <p>BIOL 2500,</p>	<p>MBIO 3010, MBIO 3030, MBIO 3410</p>	



CHEM 1310	BIOL 2520  CHEM 2210, CHEM 2220	
<p><b>In University 1 or Year 2 the following must be completed:</b></p> <p>3 credit hours of Mathematics or Physics from MATH 1200, MATH 1300<sup>1</sup>, MATH 1500<sup>1</sup>, PHYS 1020 or PHYS 1050</p> <p>STAT 1000</p> <p>6 credit hours from the Faculty of Arts, which should include the required "W" course.</p> <p>12 credit hours of approved electives</p>		<p>24 credit hours of Microbiology courses<sup>2</sup> including 15 credit hours at the 4000 level</p> <p>9 credit hours of Microbiology courses<sup>2</sup> or courses chosen from the option list (see below)</p> <p>18 credit hours of approved electives</p> <p><b>Work Terms:</b></p> <p>MBIO 3980, MBIO 3990, MBIO 4980 and/or MBIO 4990</p>
<b>THREE YEAR GENERAL (90 CREDIT HOURS)</b>		
MBIO 1010	18 credit hours of 2000, 3000, and (or) 4000 level Microbiology courses (subject to the Faculty requirement that of the 36 credit hours in the two advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level.)	
<b>MINOR</b>		
MBIO 1010 (C)	12 credit hours of Microbiology at the 2000 and (or) 3000 level	
CHEM 1300, CHEM 1310 (C)		
BIOL 1020, BIOL 1030 (C)		
<b>BIOCHEMISTRY - Joint Microbiology and Chemistry Programs:</b> See Section 4.2 Biochemistry		
<b>BIOTECHNOLOGY – Joint Microbiology and Chemistry Programs:</b> See Section 4.4 Biotechnology		
<b>NOTES:</b>		
<p>1 MATH 1310 may be taken in place of MATH 1300; MATH 1510, MATH 1520 or MATH 1690 may be taken in place of MATH 1500.</p> <p>2 MBIO 4010, MBIO 4530 and MBIO 4670 may be selected only by special permission.</p> <p>3 MBIO 4020 and MBIO 4762 cannot be selected.</p> <p>4 <b>IMPORTANT:</b> The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.</p> <p>5 MBIO 1010 may be completed in either year 1 or year 2. It is recommended that it be completed in first year. (The number 6 in brackets indicates a 6 credit hour course.)</p> <p><b>Option List for All Microbiology Programs:</b></p> <p><i>Biological Sciences:</i> BIOL 2242 (BOTN 2010), BIOL 2260 (BOTN 2210), BIOL 2261, BIOL 2300 (BOTN 2370, ZOOL 2370), BIOL 2301 (BOTN 2371, ZOOL 2371), BIOL 2380 (BOTN 2180, ZOOL 2180), BIOL 2381, BIOL 2410 (ZOOL 2530), BIOL 2411 (ZOOL 2531), BIOL 2420 (ZOOL 2540), BIOL 2421 (ZOOL 2541), BIOL 2540 (ZOOL 2150), BIOL 3260 (BOTN 2290), BIOL 3290 (BOTN 3280), BIOL 3291, BIOL 3330 (BOTN 3250), BIOL 3370 (ZOOL 3500), BIOL 3450 (BOTN 2020), BIOL 3452 (BOTN 3010), BIOL 3460 (ZOOL 3530), BIOL 3462 (ZOOL 3540), BIOL 3470, BIOL 3472, BIOL 3500 (BOTN 3460), BIOL 3501, BIOL 3540 (ZOOL 3070), BIOL 3560 (ZOOL 3060), BIOL 3561, BIOL 4242 (BOTN 4130), BIOL 4244 (BOTN 4160), BIOL 4246 (BOTN 4050), BIOL 4250 (BOTN 4210), BIOL 4430 (BOTN 4120), BIOL 4480 (ZOOL 4600), BIOL 4540 (ZOOL 4150), BIOL 4542 (ZOOL 4270), BIOL 4560 (ZOOL 4140)</p> <p><i>Chemistry:</i> CHEM 2280, CHEM 2290, CHEM 2380, CHEM 2400, CHEM 2470, CHEM 3390, CHEM 3590, CHEM 3570, CHEM 4590, CHEM 4360, CHEM 4370, CHEM 4620, CHEM 4630, CHEM 4670</p>		



*Environmental Science:* ENVR 2180

*Food Sciences:* FOOD 4150, FOOD 4280

*General Agriculture:* AGECE 2180, AGECE 2370

*Pharmacology:* PHAC 4030, PHAC 4040

*Statistics:* STAT 2000

**NOTE:** Other suitable options may be selected with permission of the de-partment.

#### 4.10.3 Microbiology -1000 Level

##### **MBIO 1010** Microbiology I Cr.Hrs.3

(Lab Required) Topics will include the definition and history of microbiology, concepts of practical microbiology, prokaryotic cell structure, prokaryotic specialization in gene expression and transfer of genetic information, the role of microbes in environments including the human body, and applications of microbiology to food production and biotechnology. Not to be held with MBIO 1011 or the former MBIO 2100 (MBIO 2101) or MBIO 2110 (MBIO 2111). Prerequisite or concurrent requirement: BIOL 1020.

##### **MBIO 1220** Essentials of Microbiology Cr.Hrs.3

(Formerly 060.122) A review of the essential principles of microbiology including immunity, with emphasis on microbial disease. Not available to students who have previously obtained credit in or are currently enrolled in MBIO 3010 or MBIO 3011 (or 060.301). Prerequisite: any grade 12 or 40S Mathematics, or equivalent. This prerequisite is waived for students in the Baccalaureate Program for Registered Nurses. NOTE: MBIO 1220 is intended for students planning to enter the Faculty of Nursing or other health care or related programs, but may be used as an elective in an Arts or Science program. It may also be used to meet a program requirement for the Honours and Major programs in Microbiology.

#### 4.10.3 Microbiology -2000 Level

##### **MBIO 2020** Microbiology II Cr.Hrs.3

(Lab Required) Topics will include bacterial growth, chromosome replication, the specifics of transcription and translation and their application to the regulation of microbial gene expression. Families of bacterial and animal viruses, their modes of reproduction and pathogenicity will be discussed. Mutation and gene transfer in bacteria will be introduced. Not to be held with MBIO 2021 or MBIO 2110 (60.211), MBIO 2111. Prerequisites: MBIO 1010 or MBIO 1011 and one of CHEM 1310, CHEM 1311 or CHEM 1320 (C).

##### **MBIO 2230** Introductory Biogeochemistry Cr.Hrs.3

(Formerly 060.223) The roles and interactions of biological, chemical and geological reactions in determining the composition of the environment. Microorganisms as major agents of biogeochemical change and their roles in the element cycles will be especially emphasized. Not available

to students who have previously obtained credit in MBIO 4320 (060.432) or MBIO 4440 (060.444) or are currently registered in MBIO 4440. Prerequisite: one of MBIO 1010, MBIO 1011, BIOL 1030, BIOL 1031 or the former 071.125(C); and CHEM 1310 or CHEM 1311 (002.131) (C).

##### **MBIO 2360** Biochemistry 1: Biomolecules and an Introduction to Metabolic Energy Cr.Hrs.3

(Lab Required) (Formerly 060.236) An introductory course dealing with kinds of molecules encountered in biochemistry, and the concept of metabolic energy as a product of catabolism and a requirement for biosynthesis. This course is also given in Chemistry as CHEM 2360. Not to be held with MBIO 2361, MBIO 2770 (060.277), CHEM 2360, CHEM 2361 (002.236), CHEM 2860 (002.286), or CHEM 2770 (002.277) Prerequisites: CHEM 1310 or CHEM 1311 (002.131); and one of BIOL 1030, BIOL 1031, or the former 071.125, both courses with a minimum grade of "C". NOTE: Students may hold this course for credit in the B.Sc. General Degree program, but may not use it to fulfill the minimum requirement of 12 credit hours in 2000 level Chemistry (pre-September 2008 regulations). Those students following the new B.Sc. General Degree regulations (effective 2008-09) are able to use this course as advanced level credit in both Microbiology and Chemistry.

##### **MBIO 2370** Biochemistry 2: Catabolism, Synthesis, and Information Pathways Cr.Hrs.3

(Lab Required) (Formerly 060.237) An introductory course dealing with the basic metabolic processes that occur in living cells, including the production and use of metabolic energy, the breakdown and synthesis of biomolecules; the synthesis of DNA, RNA and proteins; and the regulation of these processes. This course is also given in Chemistry as CHEM 2370. Not to be held with MBIO 2371, MBIO 2780 (060.278), CHEM 2370, CHEM 2371 (002.237), or CHEM 2780 (002.278). Prerequisites: CHEM 2210 (002.221) (C); and one of MBIO 2360 (060.236), MBIO 2361, CHEM 2360 (002.236), or CHEM 2361 (C). NOTE: Students may hold this course for credit in the B.Sc. General Degree program, but may not use it to fulfill the minimum requirement of 12 credit hours in 2000 level Chemistry (pre-September 2008 regulations). Those students following the new B.Sc. General Degree regulations (effective 2008-09) are able to use this course as advanced level credit in both Microbiology and Chemistry.

##### **MBIO 2410** Essentials of Molecular Biology Cr.Hrs.3

An introduction to the mechanisms, themes and patterns that



are present in the molecular biology of both eukaryotic and prokaryotic organisms. The applications of molecular biology to disciplines such as genomics, applied bioinformatics and medical microbiology will be discussed. Not available to students who have previously obtained credit in, or are currently enrolled in the following courses: BIOL 2500, BIOL 2501, MBIO 2020, MBIO 2021, the former MBIO 2100 (MBIO 2101), MBIO 3410 or MBIO 3411. Prerequisite: one of grade 12 Biology, grade 12 Chemistry, BIOL 1000, CHEM 1000, or any higher level Chemistry or Biology course; or consent of department. NOTE: MBIO 2410 is intended for students outside of Microbiology and Biological Sciences who require an introduction to molecular biology, such as those with interests in bioinformatics, biophysics, or bioengineering. It may be used to fulfill Microbiology Major or Honours program course requirements if completed prior to the courses listed above, and it may serve as advanced Level Microbiology in the three-year general degree program.

**MBIO 2770** Elements of Biochemistry 1 Cr.Hrs.3 (Lab Required) (Formerly 060.277) Basic concepts of biochemistry including the properties of biomolecules (amino acids and proteins, enzymes, carbohydrates, lipids, and nucleic acids) and aspects of energy production in cells. For students in Agricultural and Food Sciences, Human Ecology, and four-year Biological Sciences programs in Science. May not be used as part of an Honours, Major, General, or Minor program in Chemistry or in Microbiology. This course is also given in Chemistry as CHEM 2770. Not be held with CHEM 2770 (002.277), MBIO 2360, MBIO 2361 (060.236), CHEM 2360, CHEM 2361 (002.236), or CHEM 2860 (002.286). Prerequisites: CHEM 1310 or CHEM 1311 (002.131) (C) or CHEM 1320 (or 002.132) (C), plus six credit hours of university level biological sciences.

**MBIO 2780** Elements of Biochemistry 2 Cr.Hrs.3 (Lab Required) (Formerly 060.278) The continuation of MBIO 2770 (CHEM 2770), dealing with nitrogen and lipid metabolism, representative biosynthetic pathways, and synthesis and importance of DNA, RNA and proteins. For students in Agricultural and Food Sciences, Human Ecology, and four-year Biological Sciences programs in Science. May not be used as part of an Honours, Major, General, or Minor program in Chemistry or Microbiology. This course is also given in Chemistry as CHEM 2780. Not to be held with CHEM 2780 (002.278), MBIO 2370, MBIO 2371 (060.237), CHEM 2370, or CHEM 2371 (002.237). Prerequisite: A grade of "C" or better in one of MBIO 2770 (060.277), CHEM 2770 (002.277), MBIO 2360, MBIO 2361 (060.236), CHEM 2360, or CHEM 2361 (002.236).

#### 4.10.3 Microbiology -3000 Level

**MBIO 3000** Applied Biological Safety Cr.Hrs.3  
A comprehensive overview of (i) applied biological safety in research and industrial environments and (ii) the disease-causing features of relevant infectious agents and considerations for their containment. The course consists of lectures and demonstration components. Prerequisite: MBIO 1010 (MBIO 1011)(C) or the former MBIO 2100 (or equivalent MBIO 2101, 060.210) (C); and one of CHEM 1310, CHEM 1311 (002.131), CHEM 1320 (002.132) or permission of instructor. Check with department for availability.

**MBIO 3010** Mechanisms of Microbial Disease Cr.Hrs.3 (Formerly 060.301) A consideration of host-parasite relationships, an introduction to the immune response, microbial pathogenesis, viral diseases, clinical microbiology and public health, and an introduction to antimicrobial agents. Not to be held with MBIO 3011. Prerequisites: MBIO 2020 (MBIO 2021)(C) or the former MBIO 2100 (or equivalent MBIO 2101, 060.210) (C); and one of MBIO 2370, MBIO 2371(060.237), CHEM 2370, or CHEM 2371 (002.237) (C).

**MBIO 3030** Microbiology III Cr.Hrs.3 (Lab Required) The course will include an introduction to microbial growth and genomics approaches used for the analysis of microbial metabolism. Using these tools, the physiology of microbial cell walls, transport, and motility, as well as microbial metabolism as related to ATP production, respiration, fermentation and carbon fixation will be discussed. Not to be held with MBIO 3031 or the former MBIO 2100 (60.210). Prerequisites: MBIO 2020 (MBIO 2021)(C); and one of MBIO 2370, MBIO 2371, CHEM 2370, CHEM 2371 (C); or consent of instructor.

**MBIO 3280** Microbial Communities Cr.Hrs.3 (Lab Required) This course will examine microbial communities, which will be discussed in terms of their composition, physiological adaptations and their effects on their abiotic and biological surroundings. Topics will include nutrient cycling, biodegradation and adaptation to extreme environments, and the applications arising from these microbial functions. Methods for quantitation of microbial biomass and biological activity will be discussed. This course may not be held for credit with MBIO 2280. Prerequisites: both MBIO 1010 (MBIO 1011)(C) and CHEM 1310 (CHEM 1311, 002.131)(C); or MBIO 2100 (MBIO 2101, 060.210)(C). MBIO 2020 (MBIO 2020, MBIO 2110) and MBIO 2410 are recommended prerequisites.

**MBIO 3410** Molecular Biology Cr.Hrs.3 (Formerly 060.341) A rigorous treatment of the foundations of modern day molecular biology as it pertains to molecular disease, gene and cell manipulation, and cellular controls. Not to be held with MBIO 3411. Prerequisites: One of MBIO 2370, MBIO 2371 (060.237), CHEM 2370, CHEM 2371 (002.237), MBIO 2780 (060.278), or CHEM 2780 (002.278) (C); and a C or better in one of MBIO 2020 (MBIO 2021), MBIO 2110 (MBIO 2111), BIOL 2520 (BIOL 2521, ZOOL 2280, ZOOL 2281) or BIOL 2500 (BIOL 2501, BOTN 2460, BOTN 2460).

**MBIO 3430** Molecular Evolution Cr.Hrs.3 (Formerly 060.343) An analysis starting with prebiotic evolution, progressing through the elaboration of macromolecules and examining their adaptation to their function as cellular components. Proteins, carbohydrates, and nucleic acids as structural, catalytic, and genetic elements in evolution of living systems. Prerequisite: MBIO 2410 (C) or MBIO 3410 (C) or permission of instructor. MBIO 2020 (MBIO 2021) and one of MBIO 2370, MBIO 2371, CHEM 2370, CHEM 2371, MBIO 2780 or CHEM 2780 are strongly recommended for students who have not completed MBIO 3410.

**MBIO 3450** Regulation of Biochemical Processes Cr.Hrs.3 (Formerly 060.345) Mechanisms of regulation of enzyme activity, including allostery, control of selected biosynthetic and degradative pathways and regulation of gene



expression. Contact department regarding availability. Not to be held with MBIO 3451. Prerequisites: MBIO 2020 (MBIO 2021) or MBIO 2110 (MBIO 2111) (C); and one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371 (C); or consent of the department.

**MBIO 3460** Membrane and Cellular Biochemistry Cr.Hrs.3 (Lab Required) (Formerly 060.346) Isolation, fractionation, structure and function of cellular membranes and subcellular components. The central role of these elements in the biochemistry of cellular processes will be stressed. Not to be held with MBIO 3461. Prerequisites: One of MBIO 2370, MBIO 2371 (060.237), CHEM 2370, or CHEM 2371 (002.237) (C).

**MBIO 3470** Microbial Systematics Cr.Hrs.3 (Lab Required) (Formerly 060.347) Characterization and classification of the major group of micro-organisms. Bases for divisions and the relatedness among organisms will be studied. Laboratory work on the identification of representative species. Prerequisite: MBIO 3030 (MBIO 3031) or MBIO 2110 (MBIO 2111) (C).

**MBIO 3980** Work Term 1 Cr.Hrs.0 (Formerly 060.398) Work assignments in business, industry or government for students registered in the Microbiology Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

**MBIO 3990** Work Term 2 Cr.Hrs.0 (Formerly 060.399) Work assignments in business, industry or government for students registered in the Microbiology Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

#### 4.10.3 Microbiology -4000 Level

**MBIO 4010** Immunology H Cr.Hrs.3 (Lab Required) (Formerly 060.401) Topics will include antigens, antibodies, antigen-antibody reactions, immunogenetics, regulation of immune reactions, complement, hypersensitivities, autoimmunity, immunodeficiencies, transplantation and tumour immunology. Priority will be given to fourth year Science Honours students. Not to be held with MBIO 4011, MBIO 4020 (060.402), or the former 060.444. Prerequisite: MBIO 3010 or MBIO 3011 (060.301) (C).

**MBIO 4020** Immunology Cr.Hrs.3 (Formerly 060.402) Topics will include antigens, antibodies, antigen-antibody reactions, immunogenetics, regulation of immune reactions, complement, hypersensitivities, autoimmunity, immunodeficiencies, transplantation and tumour immunology. Not to be held with MBIO 4010, MBIO 4011 (060.401). Prerequisite: MBIO 3010 or MBIO 3011 (060.301) (C).

**MBIO 4410** Virology Cr.Hrs.3 (Formerly 060.441) A comprehensive examination of fundamental properties of viruses, virus taxonomy, and the different ways in which viruses replicate. The ways viruses cause disease and experimental methods used in virology

also will be examined. Not to be held with MBIO 4411, or for credit by students who have already taken MMIC 7010 (097.701). Prerequisites: MBIO 3010 or MBIO 3011 (060.301) (C); and MBIO 3410 or MBIO 3411(060.341) (C).

**MBIO 4440** Systems Microbiology: from Genomes to Life Cr.Hrs.3 (Lab Required) The purpose of this course is to use knowledge of the components of the bacterial cell to synthesize an understanding of the growth of microbes and their adaptation to their environments. The most recent research tools and systems biology approaches will be discussed. This course may not be held for credit with MBIO 3440. Prerequisites: MBIO 3030 (MBIO 3031)(C); or the former MBIO 2110 (MBIO 2111, 60.211)(C); and one of MBIO 2370, MBIO 2371, CHEM 2370, CHEM 2371(C).

**MBIO 4480** Microbes in our Environment Cr.Hrs.3 (Lab Required) A course investigating the diversity of roles microbes play in our immediate environment, and how they affect it. Environments to be examined may include the human body, waste treatment facilities and extreme environments. Molecular tools to study the community structure and roles of individual organisms will also be discussed. This course may not be held for credit with MBIO 3480 or MBIO 4320. Prerequisites: MBIO 3030 (MBIO 3031)(C); or the former MBIO 2110 (MBIO 2111, 60.211)(C); and one of MBIO 2370, MBIO 2371, CHEM 2370, CHEM 2371(C).

**MBIO 4520** Industrial Bioprocesses Cr.Hrs.3 (Lab Required) Bioprocesses for a range of commercially important healthcare and industrial products including antibiotics, vaccines, steroids, therapeutic recombinant proteins, monoclonal antibodies, and ethanol will be discussed. Other topics will include bioreactor design, metabolic engineering, applied genetic engineering and animal cell technology. This course may not be held for credit with MBIO 4510. Prerequisites: MBIO 3030 (or one of MBIO 2100 or MBIO 2101) (C); and one of MBIO 2370, MBIO 2371, CHEM 2370, CHEM 2371 (C).

**MBIO 4530** Project in Microbiology Cr.Hrs.6 (Lab Required) (Formerly 060.453) A research project chosen in consultation with the department head, and supervised by a staff member. A written report is normally required. The course is available only to final year Honours students in Microbiology, the Joint Microbiology-Chemistry programs, or the Genetics program. Not to be held with CHEM 4710 (002.471).

**MBIO 4540** Biological Energy Transduction Cr.Hrs.3 (Formerly 060.454) Biochemistry of biological processes involving interconversion of different forms of energy such as oxidative phosphorylation, membrane transport and contractile processes. Not to be held with MBIO 4541. Prerequisite: MBIO 2020 (MBIO 2021) or MBIO 2110 (MBIO 2111) (C); and one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371(C); or consent of the department. MBIO 3030 (MBIO 3031) is recommended as a prerequisite to this course.

**MBIO 4600** Molecular Genetics of Prokaryotes Cr.Hrs.3 (Lab Required) (Formerly 060.460) A detailed examination of replication, expression, mutability, repair and transposition of DNA in bacteria and their viruses. Priority will be given to Science Honours and Majors students. Check with



department for availability. Not to be held with MBIO 4601, MBIO 4602 or the former 060.452 or 060.456. Prerequisites: MBIO 2020 (MBIO 2021) or MBIO 2110 (MBIO 2111) (C); and one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371 (C). BIOL 2500, (BIOL 2501, BOTN 2460, BOTN 2461) is recommended.

**MBIO 4602** Molecular Genetics of Prokaryotes -  
Lectures Cr.Hrs.3

A detailed examination of replication, expression, mutability, repair and transposition of DNA in bacteria and their viruses. Lecture material will be identical to that of MBIO 4600, but MBIO 4602 lacks the laboratory component. Honours and Major students must register in MBIO 4600. Check with the department for availability. Not to be held with MBIO 4600, MBIO 4601 or the former 060.460, 060.452 or 060.456. Prerequisites: MBIO 2020 (MBIO 2021) or the former MBIO 2110 (MBIO 2111) (C); and one of MBIO 2370, MBIO 2371, or CHEM 2370, CHEM 2371(C). BIOL 2500 (BOTN 2460, BOTN 2461) is recommended.

**MBIO 4610** Molecular Genetics of Eukaryotes Cr.Hrs.3  
(Lab Required) (Formerly 060.461) A comprehensive study dealing with replication and expression of DNA, genome structure, and the involvement of genes in diseases such as cancer. Priority will be given to Science Honours and Majors students. Check with the department for availability. Not to be held with MBIO 4612. Prerequisites: MBIO 2020 (MBIO 2021) or MBIO 2110 (MBIO 2111) (C); and MBIO 3410 or MBIO 3411. BIOL 2500 (BIOL 2501, BOTN 2460, BOTN 2461) is recommended.

**MBIO 4612** Molecular Genetics of Eukaryotes -  
Lectures Cr.Hrs.3

A comprehensive study dealing with replication and expression of DNA, genome structure, and the involvement of genes in diseases such as cancer. Lecture material will be identical to that of MBIO 4610, but MBIO 4612 lacks the laboratory component. Honours and Majors students must register in MBIO 4610. Check with the department for availability. Not to be held with the MBIO 4610. Prerequisites: MBIO 2020 (MBIO 2021) or MBIO 2110 (MBIO 2111) (C); and MBIO 3410 or MBIO 3411 (C). BIOL 2500 (BIOL 2501, BOTN 2460, BOTN 2461) is recommended.

**MBIO 4670** Applied Molecular Biology H Cr.Hrs.3  
(Lab Required) The overall objective of this course is to introduce and describe current molecular techniques and their application to biological problems. These include, but are not limited to basic gene cloning, mutagenesis, and over-expression. Priority will be given to Science Honours students. Not to be held with MBIO 4672, or the former MBIO 4570 (60.457), MBIO 4581 or the former MBIO 4580 (60.458). Prerequisites: MBIO 3410 or MBIO 3411 (60.341) (C).

**MBIO 4672** Applied Molecular Biology Cr.Hrs.3  
The overall objective of this course is to introduce and describe the current molecular techniques and their application to biological problems. These include, but are not limited to, basic gene cloning, mutagenesis and over-expression. Not to be held with MBIO 4670, the former MBIO 4570 (060.457), MBIO 4581 or the former MBIO 4580 (060.458). Prerequisite: MBIO 3410 or MBIO 3411 (060.341) (C).

**MBIO 4980** Work Term 3 Cr.Hrs.0

(Formerly 060.498) Work assignments in business, industry or government for students registered in the Microbiology Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

**MBIO 4990** Work Term 4 Cr.Hrs.0

(Formerly 060.499) Work assignments in business, industry or government for students registered in the Microbiology Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only).

## 4.11 Department of Physics and Astronomy

**Head:** Kumar Sharma

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### 4.11.1 Program Information

Physics is the discipline that by experiment and logical analysis examines the laws of nature that form the basis for all relationships and interactions between matter and energy. Knowledge of physics is also essential in other natural sciences, such as chemistry and geology, and to professions such as engineering, medicine and dentistry. Astronomy, the other focus of this department, examines the universe, the earth and the planets, as well as phenomena such as quasars, pulsars, comets, and asteroids; a planetarium and an astronomical observatory are part of this program. In both Physics and Astronomy mathematical skills are developed simultaneously.

The department must approve a student's Honour or Major program prior to registration in each session. Students must also obtain approval for any and all revisions to their program.

The Department of Physics and Astronomy and the Department of Electrical and Computer Engineering have defined focus areas of study within their own programs. Students taking the courses recommended for these focus areas will find it easier to transfer between programs in Physics and Astronomy and Electrical and Computer Engineering programs. Students interested in obtaining more information about transferring to a Physics program from Electrical Engineering should consult with the Head of the Physics department.

### Honours

**To enter** the Honours programs in Physics and Astronomy, a student must have completed at least 24 credit hours with a minimum GPA of 3.00, and also obtained a minimum



grade of "B" in PHYS 1070, or a "B+" in PHYS 1030. Students are strongly encouraged to complete MATH 1300, MATH 1500, and MATH 1700 in Year 1. Not only are these courses required in the Physics and Astronomy programs, they are required prerequisites to several second year Physics and Astronomy required courses.

**To continue** in the Physics and Astronomy Honours program, students must maintain a minimum GPA of 3.00, and complete a minimum of 9 credit hours during each Fall and Winter Term.

**To graduate** with the B. Sc. Honours degree, a student must achieve a minimum GPA of 3.00 and minimum grade of "C" in each course that contributes to the 120 credit hours of the degree.

There are a number of awards — the Coish, the C.P. Loewen, the Neamtan, the Roulston, and the Sen Scholarships — available in this program.

**Joint Honours**

The Department of Physics and Astronomy offers joint honours programs in conjunction with the Departments of Mathematics, Computer Science, and Chemistry.

**To enter** the Joint Honours Mathematics-Physics program the student must have a minimum grade of "B" in: MATH 1300, MATH 1510, MATH 1710 (or MATH 1690), PHYS 1050 (or "B+" in PHYS 1020) and PHYS 1070.

**To enter** the Joint Honours Computer Science-Physics program, the student must have a minimum grade of "B" in: PHYS 1050 (or "B+" in PHYS 1020), PHYS 1070, MATH 1300, MATH 1500 (or equivalent), MATH 1700 (or equivalent), and COMP 1020.

**To enter** the Joint Honours Chemistry-Physics program, the student must have a minimum grade of "B" in: PHYS 1050 (or "B+" in PHYS 1020), PHYS 1070, CHEM 1300, CHEM 1310, MATH 1500 and MATH 1700.

**Double Honours**

The Department of Physics and Astronomy offers a double honours degree in conjunction with the Biochemistry program.

**Four Year Major**

The goal of this program is to provide an excellent physics education for a student with broad interests. It provides more control over the degree program, permitting significantly more electives and scheduling flexibility.

**To enter** the four year Major program in Physics and Astronomy, a student must have PHYS 1070 (C+) or PHYS 1030 (B). In addition, students must have satisfied the faculty requirements for entry to the four year Major program. Students are strongly encouraged to complete MATH 1300, MATH 1500, and MATH 1700 in Year 1. Not only are they required courses in the Physics and Astronomy programs, these courses are required prerequisites to several required second year Physics and Astronomy courses.

**Three Year General**

As prescribed with all other faculty regulations in Section 3.2, students in this program must select 36 credit hours of 2000 and (or) 3000 level courses from **two** Science departments. To satisfy the requirement in the Department of Physics and Astronomy, students must select a minimum of 18 credit hours from the list in the chart below.

Variations in any of the programs listed above may be possible, but must be approved by the head of the department and the Science general office.

**4.11.2 Physics and Astronomy Program Charts**

**4.11.2 Physics and Astronomy**

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS Option A: Astronomy<sup>1</sup> 120 CREDIT HOURS</b>			
PHYS 1050 (or PHYS 1020) and PHYS 1070 (B) (or PHYS 1030 B+)  MATH 1300 <sup>2</sup> , MATH 1500 <sup>2</sup> , MATH 1700 <sup>2</sup>  6 credit hours of ARTS including the	PHYS 2070 (6), PHYS 2260, PHYS 2380, PHYS 2390, PHYS 2490, PHYS 2600, PHYS 2610, PHYS	PHYS 3180, PHYS 3380, PHYS 3430 (6), PHYS 3630, PHYS 3650, PHYS 3670	PHYS 3680, PHYS 3640, PHYS 4230, PHYS 4240 (6), PHYS 4390  A 3 credit hour, 4000 level Physics and Astronomy course  MATH 3130



"W" requirement.	2650		
		9 credit hours of 3000 and/or 4000 level Physics and Astronomy courses.	
9 credit hours of open electives (PHYS 1810 and PHYS 1820 are highly recommended).	3 credit hours of open electives <sup>3</sup> .	3 credit hours of open electives <sup>3</sup> .	3 credit hours of open electives <sup>3</sup> .
<b>HONOURS Option B: Physics<sup>1</sup> 120 CREDIT HOURS</b>			
PHYS 1050 (or PHYS 1020) and PHYS 1070 (B) (or PHYS 1030 B+)  MATH 1300 <sup>2</sup> , MATH 1500 <sup>2</sup> , MATH 1700 <sup>2</sup>  6 credit hours of ARTS including the "W" requirement.	PHYS 2260, PHYS 2380, PHYS 2390, PHYS 2490, PHYS 2600, PHYS 2610, PHYS 2650	PHYS 3380, PHYS 3430 (6), PHYS 3650, PHYS 3670, PHYS 3680,  PHYS 3630, PHYS 3640,  PHYS 3660	PHYS 4390, PHYS 4510, PHYS 4520, PHYS 4590  6 credit hours <sup>4</sup> chosen from:  PHYS 4672, PHYS 4674, PHYS 4676, PHYS 4678  3 credit hours chosen from: PHYS 4250, PHYS 4600, PHYS 4620  MATH 3130
9 credit hours of open electives	9 credit hours of open electives <sup>3</sup>	3 credit hours of open electives <sup>3</sup>	6 credit hours of open electives <sup>3</sup>
<b>HONOURS Option C: Medical and Biological<sup>1</sup> 120 CREDIT HOURS</b>			
PHYS 1050 (or PHYS 1020), PHYS 1070 <sup>2</sup> (B) (or PHYS 1030 B+)  MATH 1300 <sup>2</sup> , MATH 1500 <sup>2</sup> , MATH 1700 <sup>2</sup>	PHYS 2260, PHYS 2380, PHYS 2390, PHYS 2490, PHYS 2600, PHYS 2610, PHYS 2650	PHYS 3380, PHYS 3430 (6), PHYS 3650, PHYS 3670, PHYS 3680, PHYS 3630, PHYS 3640, PHYS 3220	PHYS 4250, PHYS 4560  6 credit hours <sup>4</sup> chosen from:  PHYS 4672, PHYS 4674, PHYS 4676, PHYS 4678  MATH 3130
<b>The following can be completed in Year 1 or</b>	3 credit hours chosen from: PHYS 4360, PHYS 4400, ECE 3780		





**IMPORTANT:** The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates the recommended arrangement of the required courses and is meant to be a guide around which students can plan their program (Letters in brackets refer to minimum prerequisite standing required for further study. The number 6 in brackets indicates a 6 credit hour course

#### 4.11.3 Physics and Astronomy -0 Level

**PHYS 0900** Preparing for University Physics Cr.Hrs.0 (Formerly 016.090) A review of elementary physics, emphasizing the laws of mechanics, for students considering enrolling in a first-year university physics course. Mathematical techniques used in solving physics problems and the relevance of physics to everyday life will be stressed. Although this course may be used as part of the prerequisite requirements for first-year Physics courses, students are encouraged to take Physics 40S whenever possible.

#### 4.11.3 Physics and Astronomy -1000 Level

**PHYS 1020** General Physics 1 Cr.Hrs.3 (Lab Required) (Formerly 016.102) It's a crazy world; come and find out why objects fall, slide, bounce, stick, go in circles or stay straight, float or sink, glide or crash. Why don't satellites fall to the ground? What exactly does weightlessness mean anyway? Find answers to these and other questions as you get to know Newton's and other basic laws of nature and see what makes the world go round. This course, together with the sequel PHYS 1030 (or 016.103), is recommended for students seeking either a single, comprehensive course in Physics or entry into health science programs. It may also be used for entry into the Honours Physics program ("B+" or better) or the Major Physics program ("B" or better). Not to be held with PHYS 1021, PHYS 1050, PHYS 1051 (016.105), PHYS 1410 (016.141), PHYS 1420 (016.142), or the former 016.127. Prerequisites: Either Physics 40S, PHYS 0900 (016.090) (P), or equivalent; and either Pre-calculus Mathematics 40S, Applied Mathematics 40S (with 70% or better), or equivalent. It is strongly recommended that students attain a minimum of 70% as the average of their marks in Physics 40S and Pre-calculus Mathematics 40S.

**PHYS 1030** General Physics 2 Cr.Hrs.3 (Lab Required) (Formerly 016.103) Discover how physics is the basis of the hi-tech world we live in and how we live in it. Learn how to use simple, intuitive physics concepts that are described using little math and no calculus to understand a diversity of topics including how electricity is made, what drives the greenhouse effect, what makes a diamond sparkle, lasers, LASIC eye surgery and the workings of the human eye. This course, together with its prerequisite PHYS 1020 (016.102), is recommended for students seeking either a single comprehensive course in Physics, or entry into health science programs. Not suitable for entry to Major or Honours in Physics. This course may not be held with PHYS 1031, PHYS 1410 (016.141), PHYS 1420 (016.142), or the former 016.120. Prerequisite: One of PHYS 1020, PHYS 1021 (016.102) (C), PHYS 1050, or PHYS 1051 (016.105) (C).

**PHYS 1050** Physics 1: Mechanics Cr.Hrs.3 (Lab Required) (Formerly 016.105) It's rocket science! Mechanics is the science of describing (Kinematics) and explaining (Dynamics) motion. The basic concepts of

calculus together with laws of conservation of momentum and energy are used to develop the tools required to describe, analyze and predict the outcomes of linear and rotational motion in simple mechanical systems. A brief introduction to the Einstein theory of special relativity provides a taste of modern approaches to this subject. This course develops a strong scientific foundation for students considering a program of study in engineering or the physical sciences. Not to be held with PHYS 1020, PHYS 1021 (016.102), PHYS 1051, PHYS 1410 (016.141), PHYS 1420 (016.142), or the former courses 016.118, 016.120, or 016.127. Prerequisites: Pre-calculus Mathematics 40S (300) (or equivalent) and Physics 40S (300) (or equivalent); or PHYS 0900 (016.090) (Pass). It is strongly recommended that students attain a minimum of 80 per cent as the average of their marks in Physics 40S (300) and Pre-calculus Mathematics 40S (300). Prerequisite or concurrent requirement: One of MATH 1500, MATH 1501, MATH 1510, MATH 1520, the former 136.153 or MATH 1690.

**PHYS 1070** Physics 2: Waves and Modern Physics Cr.Hrs.3 (Lab Required) (Formerly 016.107) At the heart of modern communications, waves and oscillations are key to understanding the world around us from subatomic scales to biology, traffic flow, the stock market, climate change and the cosmos itself. Learn about the mysterious quantum world, the basis of the latest nanotechnology, where particles are waves and waves are particles. Explore Bohr's model of the atom and discover Heisenberg's Uncertainty Principle. This calculus based course addresses the underlying concepts for all modern science and engineering. This course, like Physics 1 (PHYS 1050), is intended for students considering a program in the physical sciences. Not to be held for credit with PHYS 1071, PHYS 1410 (016.141), PHYS 1420 (016.142). Prerequisites: PHYS 1050 (or equivalent - PHYS 1051, 016.105, 016.118) (C) or PHYS 1020 (or equivalent - PHYS 1021, 016.102) (B); and "C" or better in one of MATH 1500, MATH 1501 (136.150), MATH 1510 (136.151), MATH 1520 (136.152), or the former 136.153. Prerequisite or concurrent requirement: one of MATH 1700, MATH 1701, MATH 1690, MATH 1710, or the former 136.173.

**PHYS 1300** Energy and the Environment Cr.Hrs.6 (Formerly 016.130) This course provides a broad physical outlook on the environment in which we live. Emphasis will be placed on topics of current interest such as the atmosphere, outer space, the fundamental structure of energy and matter, energy sources, the application of physical principles in modern technology, etc. The lectures will include films and demonstrations; student participation will be encouraged in discussions and in the choice of topics. The course is designed for students of all faculties and a prior knowledge of mathematics and physics is not a requirement. Not to be held with PHYS 1301. This course cannot be used as a part of a Major or Minor in Physics.

**PHYS 1810** General Astronomy 1 Cr.Hrs.3 (Lab Required) (Formerly 016.181) The topics covered in this course outline the properties of stars and planets that can be observed and the physics necessary to interpret



these observations. It includes a brief introduction to galaxies and cosmology. Using lectures and laboratory sections, it provides an astronomy background and introduction to the scientific method. It ranges from introductory physical background to considering current research problems. This course is mainly descriptive, taught at a qualitative level, with simple arithmetic and trigonometry used frequently. Not to be held with the former 016.180.

**PHYS 1820** General Astronomy 2: Exotic Stars, Galaxies and Cosmology Cr.Hrs.3  
(Lab Required) (Formerly 016.182) This course extends the material from General Astronomy 1, increasing the student's physical understanding of topics like black holes, galaxies, and the expanding universe. Topics range from the Big Bang to the formation of neutron stars. A significant amount of simple arithmetic and trigonometry is used to provide the insights into physical background and to illuminate current research problems. Labs and observing sessions are used to teach scientific method. Not to be held with the former 016.180. Prerequisites: Pre-calculus Mathematics 40S or equivalent, or consent of department.

**PHYS 1830** Perspective on the Universe Cr.Hrs.3  
(Lab Required) (Formerly 016.183) This general interest course is a qualitative course on the concepts and discoveries in astronomy. Topics may vary from year to year and could include Life on Other Worlds or Astronomy in the News. These themes are used to give the student a qualitative astronomy background ranging from planets and stars to galaxies and cosmology. A few special sessions at Glenlea Observatory and the Lockhart Planetarium introduce the student to scientific method. Although simple arithmetic and trigonometry will be used occasionally, this is a descriptive course.

#### 4.11.3 Physics and Astronomy -2000 Level

**PHYS 2060** Fundamentals of Physics in Radiation Therapy Cr.Hrs.3  
(Lab Required) (Formerly 016.206) Provides the student with a fundamental understanding of the physical nature of photons and electrons and the manner in which they interact with an absorbing scattering medium. The concepts presented in this series will enhance the student's ability to make decisions regarding clinical radiation therapy treatments. Also taught by Allied Heath as RTT 2060. Restricted to students in the Radiation Therapy program. Prerequisite: PHYS 1030 or PHYS 1031 (016.103) (C). Prerequisite or concurrent requirements: RTT 2040 and RTT 2080.

**PHYS 2070** Observational Astronomy Cr.Hrs.6  
(Lab Required) (Formerly 016.207) Students will undertake a project on galaxies or nebulae using the University of Manitoba's Astronomical Observatory at Glenlea. Prerequisite: PHYS 1030 or PHYS 1031 (016.103) (B); or PHYS 1070 or PHYS 1071 (016.107) (C); or one of PHYS 1810 (016.181) (C) or PHYS 1830 (016.183) (C).

**PHYS 2090** Radiation Protection in Radiation Therapy Cr.Hrs.3  
(Formerly 016.209) Previews fundamental concepts used to minimize the risk when working with radiation, with emphasis on radiation therapy. Includes types and sources of radiation, radiation quantities and units, biological effect and

potential risks, basic principles of protection, regulation and dose limits, methods of dose monitoring, and applications in radiation therapy. Also taught by Allied Heath as RTT 2090. Restricted to students in the Radiation Therapy program. Prerequisites: RTT 2100 (163.210) (C), RTT 2060 (163.206) (C).

**PHYS 2150** Radiation Biology Cr.Hrs.3  
(Formerly 016.215) This course deals with the fundamentals of radiation biology and focuses on the effects of radiation at a cellular and molecular level. Also taught by Allied Heath as RTT 2150. Restricted to students in the Radiation Therapy program. Prerequisite: PHYS 1030 or PHYS 1031 (016.103) (C).

**PHYS 2152** Modern Physics for Engineers Cr.Hrs.3  
(Lab Required) An overview of topics in modern physics including wave particle duality, atomic structure and quantum mechanics. Elementary classical electromagnetic theory and wave theory are reviewed as an introduction to the modern physics concepts. For Engineering students only. Not to be held with PHYS 1070 or PHYS 1071 (016.107). Prerequisites: a "C" or better in one of PHYS 1050, PHYS 1051 (016.105), or the former 016.118; or a "B" or better in PHYS 1020 or PHYS 1021 (016.102); and a "C" or better in one of MATH 1500, MATH 1501 (136.150), MATH 1510 (136.151), MATH 1520 (136.152), or the former 136.153; and a "C" or better in one of MATH 1700, MATH 1701 (136.170), MATH 1710 (136.171), the former 136.173, or MATH 1690 (136.169). Prerequisite or concurrent requirement: MATH 2130.

**PHYS 2210** Understanding Electricity and Magnetism Cr.Hrs.3  
An introduction ranging from its history to connections with real-world phenomena in engineering and biology, and common sense on the understanding of the phenomena. The student is carefully guided through mathematical derivations. Physics is used to develop the theory and the applications of such things as motors, radios, magnetic resonance imaging (MRI) systems and computers. Not to be held with PHYS 2200, PHYS 2201, PHYS 2600 (016.260) or PHYS 2610 (016.261). Prerequisites: A "C" or better in PHYS 1070 (or equivalent - PHYS 1071, 016.107, 016.106, 016.120), or a "C+" or better in both of PHYS 1020 (or equivalent - PHYS 1021, 016.102) and PHYS 1030 (or equivalent - PHYS 1031, 016.103); and a "C" or better in one of MATH 1500, MATH 1501 (136.150), MATH 1510 (136.151), MATH 1520 (136.152), the former 136.153, or MATH 1690 (136.169). Prerequisite or concurrent requirements: MATH 1200 or MATH 1201; and one of MATH 1690, MATH 1700, MATH 1701, MATH 1710, or the former 136.173.

**PHYS 2250** Introductory Modern Physics Cr.Hrs.3  
(Formerly 016.225) Come join us as we explore the ground breaking discoveries in physics during the last 100 years that have laid the foundation for our modern high-tech world and brought us nuclear power, computers, nanotechnology and new energy technologies (to name a few). Then, finish off with a look into the future, at the 21st century physics frontier. Not available to students who have previously obtained credit in, or are currently registered in PHYS 2251, PHYS 2380 (016.238) or the former 016.250. Not available to students in Honours or Major programs in Physics. Prerequisites: a "C" or better in PHYS 1070 (or equivalent - PHYS 1071, 016.107, 016.127), or a "C+" or better in both of



PHYS 1020 (or equivalent – PHYS 1021, 016.102) and PHYS 1030 (or equivalent – PHYS 1031, 016.103); and a “C” or better in one of MATH 1500, MATH 1501 (136.150), MATH 1510 (136.151), MATH 1520 (136.152), the former 136.153, or MATH 1690 (136.169). Prerequisite or concurrent requirements: MATH 1200 or MATH 1201; and one of MATH 1690, MATH 1700, MATH 1701, MATH 1710 or the former 136.173 (D).

**PHYS 2260 Optics Cr.Hrs.3**

(Lab Required) (Formerly 016.226) A survey of refraction, reflection, simple lens systems and optical systems, dispersion, achromatism and an elementary treatment of diffraction, interference, and polarization. Not to be held with PHYS 2261. Prerequisites: A “C” or better in PHYS 1070 (or equivalent - PHYS 1071, 016.107), or a “C+” or better in both of PHYS 1020 (or equivalent - PHYS 1021, 016.102) and PHYS 1030 (or equivalent - PHYS 1031, 016.103); and a “C” or better in one of MATH 1500, MATH 1501 (136.150), MATH 1510 (136.151), MATH 1520 (136.152), the former 136.153, or MATH 1690 (136.169). Prerequisite or concurrent requirements: One of MATH 1300, MATH 1301 (136.130), or MATH 1310 (136.131); and one of MATH 1690, MATH 1700, MATH 1701 (136.170), MATH 1710 (136.171), or the former 136.173.

**PHYS 2270 Physical Topics for Biologists A Cr.Hrs.3**

(Formerly 016.227) Physical topics with a relation to biology are discussed. Radiative transfer of energy, boundary layers, heat conduction, diffusion, mass transport, and the use of radioactive materials in biology are considered. Not to be held with PHYS 2271. Prerequisite: a grade of “C” or better in one of PHYS 1050, PHYS 1051 (016.105), PHYS 1020, or PHYS 1021 (016.102); or consent of department.

**PHYS 2280 Physical Topics for Biologists B Cr.Hrs.3**

(Formerly 016.228) Physical properties of solids, liquids, and gases including diffusion and membranes; radiation and radioactivity. Aspects of particular interest to the biological sciences are stressed. Not to be held with PHYS 2281. Prerequisite: a grade of “C” or better in one of PHYS 1070, PHYS 1071 (016.107), PHYS 1030, or PHYS 1031 (016.103); or consent of department.

**PHYS 2350 Energy Sources: Physical Aspects Cr.Hrs.3**

(Formerly 016.235) A detailed investigation of the physical aspects of energy production and utilization. Critical comparison of the various energy sources including solar, nuclear, fossil, and wind will be emphasized. The physics of energy collection, production, storage, and distribution will be discussed in the context of thermodynamics, radiation, solid state and nuclear physics. Prerequisite: a grade of “C” or better in one of PHYS 1070, PHYS 1071 (016.107), PHYS 1030, or PHYS 1031 (016.103); or consent of department.

**PHYS 2380 Quantum Physics 1 Cr.Hrs.3**

(Formerly 016.238) The first in a sequence of three courses on Quantum Physics. This course introduces the basic principles of quantum theory including cavity radiation and Planck's postulate, wave-particle duality, the Bohr model, and the Schrodinger theory of quantum mechanics. Special emphasis is placed on the derivation of the time independent Schrodinger equation and its solutions in one dimension. Not to be held with the former 016.250. Prerequisites: PHYS 1070 or PHYS 1071 (016.107) (C); and one of MATH 1690 (136.169) (C), MATH 1700, MATH 1701 (136.170) (C),

MATH 1710 (136.171) (C), or the former 136.173 (C).

**PHYS 2390 Theoretical Physics 1 Cr.Hrs.3**

This course provides an introduction to the mathematics required for both the Honours and Major programs in Physics and Astronomy. Topics include series expansions, partial derivatives, vector calculus and integral theorems. Not to be held with the former 016.237. Prerequisites: PHYS 1070, PHYS 1071 (016.107) (C); and a grade of “C” or better in one of MATH 1690 (136.169), MATH 1700, MATH 1701 (136.170), MATH 1710 (136.171), or the former 136.173.

**PHYS 2490 Theoretical Physics 2 Cr.Hrs.3**

This course provides a continuation of the introduction to the mathematics required for both the Honours and Major programs in Physics and Astronomy. Topics include Fourier series, differential equations, special functions, boundary value problems and transform methods. Not to be held with the former 016.237. Prerequisite: PHYS 2390.

**PHYS 2600 Electromagnetic Field Theory Cr.Hrs.3**

(Formerly 016.260) Electric field, electric potential, Gauss' law, capacitors, dielectric materials, magnetic fields, Ampere's law, magnetic induction, magnetic materials, displacement current, integral form of Maxwell's equations. Not to be held with PHYS 2200 or PHYS 2201 (016.220). Prerequisites: a “C” or better in one of PHYS 1070, PHYS 1071 (016.107), the former 016.106, or the former 016.120; and a “C” or better in one of MATH 1690 (136.169), MATH 1700, MATH 1701 (136.170), MATH 1710 (136.171) or the former 136.173.

**PHYS 2610 Circuit Theory and Introductory Electronics Cr.Hrs.3**

(Lab Required) (Formerly 016.261) Ohm's law, Kirchoff's laws, DC circuit analysis, equivalent circuits, AC circuit analysis, complex impedance, RLC circuits, magnetic coupling, transformers, diodes and diode circuits. Not to be held with PHYS 2200 or PHYS 2201 (016.220). Prerequisite: PHYS 2600 (016.260) (C).

**PHYS 2650 Classical Mechanics 1 Cr.Hrs.3**

(Formerly 016.265) The first in a sequence of three courses on intermediate to advanced level mechanics. Topics include dynamics of a particle, conservation theorems, rotation, rolling motion, oscillations, gravitation and central force motion, and associated mathematical methods. Prerequisite: one of PHYS 1070, PHYS 1071 (016.107), or the former 016.106 (C). Prerequisite or concurrent requirements: PHYS 2490.

**PHYS 2700 Concepts of Physical Science to 1900 Cr.Hrs.3**

(Formerly 016.270) The evolution of scientific thought is traced through three major historical periods, namely the early Greeks, the scientific revolution of the 16th and 17th centuries and the modern period up to 1900. The course is designed to present the key ideas of scientific inquiry into the nature of heat, light, matter and celestial mechanics within their historical context. Not to be held with the former 016.131. This course is not to be held for credit in a Major or Honours program in Physics and Astronomy.

**PHYS 2710 Concepts of Physical Science from 1900 Cr.Hrs.3**

(Formerly 016.271) This course deals with the concepts of modern physics which arose near the turn of the twentieth century and revolutionized our view of the physical world.



Einstein's Theory of Relativity, the Bohr-Rutherford atom and wave-particle duality are discussed. The impact of these ideas on modern society is explored. N.B. This course should be preceded by PHYS 2700 (016.270) or the former 016.131. Not to be held with the former 016.132. This course is not to be held for credit in a Major or Honours program in Physics and Astronomy.

#### 4.11.3 Physics and Astronomy -3000 Level

##### PHYS 3180 Stars Cr.Hrs.3

(Formerly 016.318) This course is an application of physics to the structure of stars, their formation and evolution; theoretical models and observations; comparisons of main sequence stars like our Sun, binary star systems, post-main sequence evolution, and the final stages of stellar evolution such as the formation of white dwarfs, neutron stars and black holes. Prerequisite: PHYS 1070 or PHYS 1071 (016.107) (C).

##### PHYS 3220 Medical Physics and Physiological Measurement Cr.Hrs.3

(Formerly 016.322) This course will introduce the core subject areas of Medical Physics, in particular the physics of physiology and of radiology. The mechanics of body systems and the theory, medical applications and safety issues relating to the production, use, detection and measurements of electromagnetic radiation (both ionizing and non-ionizing) will be included. It will also cover Medical imaging (Ultrasound, CT and MRI) and will provide the student with an understanding of the physics underlying neurological, audiological, respiratory and vascular function and measurements. Prerequisite: one of PHYS 2600 (016.260) (C) or PHYS 2210 (or the former PHYS 2200 or 016.220)(C), or PHYS 2152, or consent of the department.

##### PHYS 3360 Intermediate Modern Physics Cr.Hrs.6

(Formerly 016.336) Introduction to wave mechanics and its applications in atomic, molecular, and solid state physics. A survey of nuclear and particle physics phenomena. An introduction to astrophysics. Prerequisite: PHYS 2250 or PHYS 2251 (016.225) (C).

##### PHYS 3380 Quantum Physics 2 Cr.Hrs.3

(Formerly 016.338) This course is the sequel to PHYS 2380 (016.238). It focuses on solutions of the three-dimensional Schrodinger equation with special emphasis on one-electron atoms, multi-electron atoms, and single molecules. Not to be held with PHYS 4640 (016.464), PHYS 4650 (016.465), the former 016.358, or the former 016.370. Prerequisite: PHYS 2380 (016.238), or the former 016.250 (C).

##### PHYS 3430 Honours Physics Laboratory Cr.Hrs.6

(Lab Required) (Formerly 016.343) Six hours per week. Prerequisites: PHYS 2260 or PHYS 2261 (016.226) (C); and one of PHYS 2610 (016.261) or the former 016.269 (C); or consent of department.

##### PHYS 3570 Physics of Materials 1 Cr.Hrs.3

(Formerly 016.357) Introduction to the physics of materials. Solids within the elastic limit: stress and strain tensors, elastic constants. Liquids: continuity equation, Bernoulli, Euler and Navier-Stokes equations. Recommended prerequisite or concurrent requirement: PHYS 3680.

**PHYS 3630** Electro - and Magnetostatic Theory Cr.Hrs.3  
Material covered will include electrostatics (i.e. Gauss' Law, Laplace and Poisson equations) and magnetostatics (Lorentz force, Maxwell equations) as well as the properties of electrostatic fields in matter and magnetism in materials. Not to be held with the former 016.369. Prerequisites: PHYS 2600 (016.260) (C); and PHYS 2490 or the former 016.237(C); or consent of department.

##### PHYS 3640 Electro - and Magnetodynamics and Special Relativity Cr.Hrs.3

Topics covered will include time dependent Maxwell's equations, Ohm's and Faraday's Law, electromagnetic waves, potential and fields, radiation, and special relativity including the Lorentz transformations. Not to be held with the former 016.369. Prerequisite: PHYS 3630 (C).

##### PHYS 3650 Classical Mechanics 2 Cr.Hrs.3

(Formerly 016.365) The second in a sequence of three courses on intermediate to advanced level mechanics. Topics include dynamics of a system of particles, noninertial reference frames, dynamics of rigid bodies, calculus of variations, Lagrangian and Hamiltonian dynamics. Not to be held with the former 016.233. Prerequisite: PHYS 2650 (016.265) (C).

##### PHYS 3660 Classical Mechanics 3 Cr.Hrs.3

(Formerly 016.366) The third in a sequence of three courses on intermediate to advanced level mechanics. Topics include nonlinear oscillations and chaos, coupled oscillations, the wave equation in continuous media, special relativity. Not to be held with the former 016.356. Prerequisite: PHYS 3650 (016.365) (C).

##### PHYS 3670 Classical Thermodynamics Cr.Hrs.3

An introduction to the laws of classical equilibrium thermodynamics and their applications. Not to be held with the former 016.341. Prerequisite: PHYS 2490 or the former 016.237(C).

##### PHYS 3680 Statistical Mechanics Cr.Hrs.3

An introduction to the principles of classical and quantum statistical mechanics and their applications. Not to be held with the former 016.341. Prerequisites: PHYS 2380 (016.238) (C) and PHYS 3670 (C).

##### PHYS 3800 Topics in Astronomy Cr.Hrs.6

(Lab Required) (Formerly 016.380) An assignment and conference course to be taken only through consultation with the head of the department. The topics will vary depending upon student needs and interests, and will include specialized topics not available in regular course offerings.

#### 4.11.3 Physics and Astronomy -4000 Level

##### PHYS 4230 The Phenomenology of Galaxies Cr.Hrs.3

(Formerly 016.423) This course describes the phenomenology of galaxies as determined by recent observational data. Topics include the characteristics and distribution of stars; radiation from the interstellar medium (hydrogen, molecular gas and dust); the kinematics of the stellar and gaseous components of the Milky Way; the formation and evolution of galaxies and clusters of galaxies. Prerequisite: PHYS 3180 (016.318) (C).

**PHYS 4240** Astronomy Project Cr.Hrs.6

(Formerly 016.424) A research oriented course involving processing, analysis, and interpretations of astrophysical data. Available topics include neutron stars, supernova remnants, astrophysical jet sources, the interstellar medium, and galactic structure. Prerequisites: PHYS 2070 (016.207) (C) and PHYS 3180 (016.318) (C). Prerequisite or concurrent requirement PHYS 4230.

**PHYS 4250** Computational Physics Cr.Hrs.3

(Formerly 016.425) Application of numerical methods and programming skills to model a variety of physics problems on a computer. Topics include differential equations, boundary value and eigenvalue problems, special functions, and Monte Carlo methods, with examples from classical, quantum, and statistical mechanics. Prerequisites: PHYS 2490 or the former 016.237 (C); or consent of department.

**PHYS 4300** Topics in Physics Cr.Hrs.3

(Formerly 016.430) Topics will vary depending upon student needs and interests, and will include specialized topics not available in regular course offerings. Prerequisite: a "C" or better in one of PHYS 3380 (016.338), the former 016.370, or the former 016.358; or consent of department.

**PHYS 4360** Medical Radiation Physics Cr.Hrs.3

The relevant physics of the production and interaction of radiation beams used in both diagnostic and therapeutic medicine will be covered. Such beams included X- and  $\gamma$ -rays, particle beams, visible and I.R. radiation, microwaves, and ultrasound. Prerequisite: PHYS 4560 (016.456) or consent of instructor.

**PHYS 4390** Quantum Physics 3 Cr.Hrs.3

Sequel to PHYS 3380 (016.338). Hilbert space formalism, symmetry and conservation laws, angular momentum, stationary state perturbation theory, variational methods. Not to be held with the former 016.438. Prerequisites: PHYS 2490 or the former 016.237 (C); and PHYS 3380 (016.338) (C).

**PHYS 4400** Medical Imaging Cr.Hrs.3

Fundamental principles of image formation, analysis of the characteristics of medical images, parametric description of image quality; application to transmission radiography. Prerequisite: Consent of instructor.

**PHYS 4510** Introduction to Nuclear Physics Cr.Hrs.3

(Formerly 016.451) Nuclear properties, the nuclear two-body problem; the deuteron and nucleon-nucleon scattering, nuclear models, nuclear disintegration; alpha-decay, gamma transitions, and beta-decay nuclear reactions; elementary particles. Prerequisite: a "C" or better in one of PHYS 3380 (016.338), the former 016.370, or the former 016.358.

**PHYS 4520** Introduction to Solid State Physics Cr.Hrs.3

(Formerly 016.452) An introduction to the following topics as they relate to the properties of solids: crystal structure and lattice energy; lattice vibrations and specific heat; free-electron theory and band theory-metals, semiconductors and insulators; vacancies, diffusion, dislocations, and simple alloys. Prerequisite: a "C" or better in one of PHYS 3380 (016.338), the former 016.370, or the former 016.358.

**PHYS 4560** Applied Nuclear Science Cr.Hrs.3

(Formerly 016.456) Review of nuclear physics, radioactive decay, nuclear reactions, interaction of radiation with matter,

stopping powers, radiation dosimetry, radiation hazards; applications of nuclear science in medicine, nuclear reactors, chain reaction, moderators, neutron transport theory, nuclear fusion. Prerequisite: PHYS 4510 (016.451) (C).

**PHYS 4590** Advanced Optics Cr.Hrs.3

Light as a classical electromagnetic wave, optical fields in media, interference by wavefront and amplitude splitting, diffraction, diffraction theory of image formation, spatial filtering and image processing, coherence theory. Not to be held with the former 016.458. Prerequisites: PHYS 2260 (016.226) (C); and PHYS 3640 or the former 016.369 (C).

**PHYS 4600** Lasers and Applications Cr.Hrs.3

Light and atoms: semi-classical theory, principles of laser operation and properties of laser light, polarization optics, Gaussian beam optics, laser spectroscopy. Not to be held with the former 016.458. Prerequisites: PHYS 2260 (016.226) and PHYS 3380 (016.338) (C).

**PHYS 4620** Advanced Classical Mechanics Cr.Hrs.3

(Formerly 016.462) Canonical invariants and Lagrange and Poisson brackets. Hamilton-Jacobi theory, action-angle variables, normal modes of vibration. Prerequisite: PHYS 3660 (016.366) or the former 016.356 (C).

**PHYS 4630** Physics of Materials 2 Cr.Hrs.3

(Formerly 016.463) Physics of materials beyond the elastic limit, emphasizing atomistic features. Structural aspects, crystal defects, plastic deformation, radiation damage, diffusion and dislocations. Prerequisite: PHYS 3570 (016.357) (C).

**PHYS 4672** Physics Laboratory A Cr.Hrs.3

(Lab Required) For students in term 1 of their final year in Honours. Experiments are available in nuclear physics, solid state physics, and optics. All are open ended, permitting the student to pursue the investigation of a phenomenon as far as desired. First part of a two course series. Not to be held with the former PHYS 4670, 016.444 or PHYS 4570 (016.457). Prerequisites: PHYS 3430 (016.343) (C) or consent of department.

**PHYS 4674** Physics Laboratory B Cr.Hrs.3

(Lab Required) For students in term 2 of their final year in Honours. Experiments are available in nuclear physics, solid state physics, and optics. All are open ended, permitting the student to pursue the investigation of a phenomenon as far as desired. Second part of a two course series. Not to be held with the former PHYS 4670, 016.444 or PHYS 4570 (016.457). Prerequisites: PHYS 3430 (016.343) (C); and one of PHYS 4672 (C) or PHYS 4676 (C).

**PHYS 4676** Honours Thesis - Proposal and Preparation Cr.Hrs.3

For students in term 1 of their final year in Honours. The student will prepare a proposal for the undergraduate thesis and demonstrate the feasibility of the project under the supervision of a faculty member. The results of the study will be presented (in written and oral form) to an examining committee during the term. Both experimental and theoretical topics are acceptable. A grade of C (based on the presentations) is required to proceed to the next course which forms the final stage of the honours thesis. Not to be held with the former PHYS 4670, the former 016.444, the former PHYS 4570 (016.457), or PHYS 4672. Prerequisites:



PHYS 3430 (016.343) (C) and consent of department.

**PHYS 4678** Honours Thesis - Dissertation Cr.Hrs.3

For students in term 2 of their final year in Honours. The student will complete the work needed and produce an undergraduate thesis under the supervision of a faculty member. The grade will be based on the examining

committee's evaluation of a progress report (presented mid-term) and an evaluation of the thesis manuscript and oral presentation at the end of term. Both experimental and theoretical topics are acceptable. Not to be held with the former PHYS 4670 (016.444), PHYS 4570 (016.457), PHYS 4672, or PHYS 4674.

prior approval from the Associate Head (Undergraduate) or the Undergraduate Advisor.

## 4.12 Psychology Program

**Head:** Todd Mondor

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**Telephone:** 204 474 9338

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Psychology is the scientific study of behaviour and mental processes, including the biological bases of behaviour and cognitive processes, and behavioural and cognitive neuroscience. The Honours and Major programs combine courses in Psychology with related courses in Science. Courses from the Faculty of Arts are included in this program. The Faculty of Science offers programs leading to a B.Sc. (Honours) degree in Psychology and a B.Sc. (Major) degree in Psychology.

### Honours

**To enter** the Honours program, students must have obtained a grade of "B+" or better in PSYC 1200 (or in both PSYC 1211 and PSYC 1221) and a grade of "B" in six credit hours in courses offered by the Faculty of Science. In addition, students must have obtained a Grade Point Average of 3.25 or better on their first 24-30 credit hours and have no failed courses. Introductory courses in Biology, Chemistry, Computer Science, Mathematics, Statistics or Biological Sciences are highly recommended.

**To continue** in the Honours program, a student must register in a minimum of 9 credit hours in each Fall and Winter Term and must meet all of the continuation criteria of the Faculty of Science. In addition, students must maintain a minimum Degree Grade Point Average of 3.25 based on all courses in the program. Students who do not meet the minimum continuation requirement will be required to withdraw from the Honours program.

The department must approve a student's Honours program for each session. All revisions to the program must also have

**To graduate**, a student must obtain 120 credit hours of courses with grades of "C" or better in each course and with a minimum grade point average of 3.25 on the 120 credit hours that contribute to the degree. In addition, students must complete the program of study in the chart below.

### Four Year Major

**To enter** the Major program, students must normally have obtained a grade of C+ or better in PSYC 1200 (or in both PSYC 1211 and PSYC 1221) and in six credit hours in courses offered by the Faculty of Science and meet the Faculty of Science requirements for entry to the Major program. Introductory courses in Biological Sciences, Chemistry, Computer Science, Mathematics, or Statistics are highly recommended.

**To continue** in the Major program, a student must meet all of the continuation criteria of the Faculty of Science. This includes maintaining a minimum GPA of 2.00 at each point of assessment, and no more than 18 credit hours of failing grades after entry to the program. Students who do not meet the minimum continuation requirement will be required to withdraw from the Major program. The department must approve a student's Major program for each session. All program revisions must also have prior approval.

**To graduate** with the degree of Bachelor of Science (Major), a student must complete 120 credit hours of courses with passing grades (D or better) in each course, with a minimum GPA of 2.00 on the 120 credit hours that contribute to the degree. In addition, the student must complete the program of study as listed in the program chart below.

NOTE: Psychology cannot be used to fulfill either the introductory or advanced level Science requirements in the 3-year B.Sc. General Degree.



**4.12.2 Psychology,**

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS<sup>8</sup> 120 CREDIT HOURS</b> (comprising courses listed in chart below, and electives)			
PSYC 1200 (B+) (or PSYC 1211 (B+) and PSYC 1221 (B+)) (6)  6 credit hours Science <sup>1</sup> (B)	PSYC 2250, PSYC 2260  6 credit hours 2000 or 3000 level <sup>2</sup> Psychology  15 credit hours Science <sup>5</sup>  3 credit hours options <sup>6</sup>	One of: PSYC 3630 or PSYC 3340  PSYC 3200  3 credit hours from PSYC 3520, PSYC 3560, PSYC 3590 or a 4000 level PSYC course  12 credit hours Psychology <sup>3</sup>  9 credit hours Science <sup>5</sup>	PSYC 4520 (6)  18 credit hours Psychology <sup>4</sup>  6 credit hours Science <sup>5</sup>
30 Hours	30 Hours	30 Hours	30 Hours
<b>FOUR YEAR MAJOR<sup>8,9</sup> 120 CREDIT HOURS</b> (comprising courses listed in chart below, and electives)			
PSYC 1200 (C+)(or PSYC 1211 (C+) and PSYC 1221(C+)) (6)  6 credit hours Science <sup>1</sup> (C+)	PSYC 2250, PSYC 2260  6 credit hours 2000 or 3000 level Psychology <sup>7</sup>  Plus 30 credit hours of courses from departments in the Faculty of Science, including a minimum of 18 credit hours at the 2000 level or above <sup>5</sup> .	18 credit hours 2000 or 3000 level Psychology <sup>7</sup>	18 credit hours 2000 or 3000 level Psychology <sup>7</sup>
A "W" course must be taken in Year 1 or Year 2			
<b>MINOR</b>			
PSYC 1200 or (PSYC 1211 and PSYC 1221)	12 credit hours in Psychology courses numbered at the 2000 or 3000 level		

**NOTES:**

- <sup>1</sup> Introductory courses in Biological Sciences, Chemistry, Computer Science, Mathematics, or Statistics are highly recommended.
- <sup>2</sup> These 6 credit hours must include 3 credit hours from each of two different lettered categories of Psychology courses below.
- <sup>3</sup> These 12 credit hours must include 3 credit hours from each of two different lettered categories of Psychology courses below and not sampled in Year 2.
- <sup>4</sup> These 18 credit hours must include 6 credit hours at the 4000 level; and 6 credit hours at any level including any remaining lettered category below.
- <sup>5</sup> The Science courses that are chosen must be approved by the Department of Psychology and must include a minimum of 18 credit hours at the 2000 level or above.
- <sup>6</sup> Free options are to be chosen from courses that are acceptable for credit in the Faculty of Science and must be approved by the Department of Psychology.
- <sup>7</sup> During Years 2 to 4 a total of 42 credit hours of 2000 or 3000 level Psychology courses must be completed, including a minimum of 3 credit hours from each of four of the five lettered categories of courses below.
- <sup>8</sup> The courses required in this program satisfy the university mathematics requirement.
- <sup>9</sup> **IMPORTANT:** The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.  
(Letters in brackets indicated minimum prerequisite standing required for further study. The number 6 in brackets indicates a 6 credit hour course.)

**Categories of Psychology Courses**

- Category A: Personality/Social PSYC 2410, PSYC 2420, PSYC 3450, PSYC 3460
- Category B: Developmental PSYC 2290, PSYC 2310, PSYC 2370
- Category C: Learning PSYC 2440, PSYC 2470
- Category D: Cognitive PSYC 2480, PSYC 3160, PSYC 3170, PSYC 3441, PSYC 3580, PSYC 3610
- Category E: Biological PSYC 2360, PSYC 3350, PSYC 3430

**Psychology Courses**

**All Psychology courses are available to Science students. For a complete course listing, see the Faculty of Arts section.**

**Psychology courses taught at the universit  de Saint-Boniface can be used to satisfy degree requirements**



## 4.13 Department of Statistics

**Head:** Xikui Wang

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### 4.13.1 Program Information

Statistics is a discipline grounded in mathematics that has practical applications in many other areas. Statistics is an analytical discipline that helps other disciplines carry out research projects and studies that involve measurement, comparison, and interpretation. Statistics is a useful ancillary subject to other sciences, the social sciences, and many of the professional programs. The department offers joint programs with Mathematics, Economics and Actuarial Mathematics.

### Honours Requirements

Students will normally take STAT 2000 and STAT 2400 in Year 2 and enter Honours in Year 3.

**To enter** the Honours program in Statistics, a student must have completed at least 24 credit hours with a minimum GPA of 3.00, and also obtained a minimum grade of "B" in STAT 2400. STAT 1000, MATH 1300, MATH 1500, and MATH 1700 are all requirements of the Statistics Honours degree program and students are strongly encouraged to take these courses in Year 1.

**To continue** in the Statistics Honours program, students must maintain a minimum GPA of 3.00, and complete a minimum of 9 credit hours during each Fall and Winter Term.

**To graduate** with the B. Sc. Honours degree, a student must achieve a minimum GPA of 3.00 and minimum grade of "C" in each course that contributes to the 120 credit hours of the degree.

### Statistics Honours Cooperative Option

Students interested in alternating academic terms and terms of paid employment as part of their Honours Statistics program may enter the Cooperative Option in April of their second year in Honours Statistics. This program provides students with a minimum of 12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and university units.

The course and grade requirements for entry to this option are the same as those required for entry to the regular Honours program (see above), as indicated in the chart. Students are required to complete the first and second year requirements of the program; and STAT 3470 and STAT 3480 before they begin their first employment term. Students should refer to the general faculty regulations for B.Sc. (Honours) Cooperative Option in Section 3.6.

**To continue** in the Honours Cooperative program a student must maintain a minimum GPA of 3.00, successfully complete each work term and complete a minimum of 9 credit hours during each academic term. Students should note that the grade requirements for the Cooperative Option are the same as that for the regular Honours program (see above).

Students must check with the Co-op office for the April application deadline information. They will normally be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each employment term.

### Four Year Major Requirements

Students will normally take STAT 2000 and STAT 2400 in Year 2 and enter the four year Major in Year 3.

**To enter** the Major Degree program in Statistics, a student must have completed at least 24 credit hours with a minimum GPA of 2.00, and also obtained a minimum grade of "C+" in STAT 2400. STAT 1000, MATH 1300, MATH 1500, and MATH 1700 are all requirements of the Statistics Honours degree program and students are strongly encouraged to take these courses in Year 1.

**To continue** in the four year Major program a student must maintain a minimum GPA of 2.00.

**To graduate** from the four year Major program a student must obtain a minimum GPA of 2.00 on the 120 credit hours that contribute to the degree and also a minimum grade of "C" in each of the Major Program Specific courses (see below).

### Statistics Four Year Major Cooperative Option

Students interested in alternating academic terms and terms of paid employment as part of their Major program in Statistics may enter the Cooperative Option in April of their second year in Statistics. This program provides students with a minimum of 12 months of paid employment by the time they graduate. It enables them to obtain work experience in research and industry with participating firms, government agencies and university units.

The course and grade requirements for entry to this option are the same as those required for entry to the regular Major



program. Students are required to complete the first and second year requirements of the program; and STAT 3470 and STAT 3480 before they begin their first employment term. Students should refer to the general faculty regulations for B.Sc. (Major) Cooperative Option in Section 3.4.

**To continue** in the four year Major program a student must maintain a minimum GPA of 2.00. Students should note that the grade requirements for the Cooperative Option are the same as that for the regular Major program (see above).

Students must check with the Co-op office for the April application deadline information. They will normally be notified of their provisional acceptance in the program by September. Acceptance into the program is dependent upon the student receiving an employment placement. Employment term positions available to the students will be approved by the department, and the employers will select the students they wish to employ. Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Option if the demand for places exceeds the number of places available. The department reserves the right to select the best qualified applicants.

Students are required to register in and pay fees for each employment term prior to the commencement of each employment term. Students will be required to submit an employment report upon the completion of each employment term.

#### Major Program Specific courses

All courses specified in the program charts below (excluding the required optional courses and electives).

The department must approve a student's four year Major program each session. Students must obtain departmental approval for any and all revisions to their programs.

In order to improve their academic backgrounds as well as job opportunities, students should carefully elect the optional courses in this program. They should particularly consider the following sequence of courses in Economics and Computer Science.

*Economics:* ECON 1010, ECON 1020, ECON 2450, ECON 2460, ECON 2470, ECON 2480, ECON 3170, ECON 3180, ECON 3730, ECON 4120, ECON 4130.

*Computer Science (Software and Artificial Intelligence):* COMP 1260, COMP 1270, COMP 1010, COMP 1020, COMP 2080, COMP 2130, COMP 2140, COMP 3380, COMP 3440, COMP 4200, COMP 4380.

*Computer Science (Numerical Analysis and Graphics):* COMP 1260, COMP 1270, COMP 1010, COMP 1020, COMP 2080, COMP 2130, COMP 2140, COMP 2190, COMP 3140 or COMP 3490.

#### Three Year General

As prescribed with all other faculty regulations in Section 3.2, students in this program must select 18 credit hours of 2000, 3000, or 4000 level courses from each of two Science areas. To satisfy the requirement in the area of Statistics, students must take a minimum of 18 credit hours of 2000, 3000 and (or) 4000 level Statistics courses.

#### 4.13.2 a Statistics Program Charts,

##### 4.13.2 Statistics

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>HONOURS (Including Co-operative Option) 120 CREDIT HOURS</b> (comprising courses listed in chart below, and electives)			
STAT 1000	STAT 2400 (B)	STAT 3050, STAT 3400 <sup>4</sup> , STAT 3470, STAT 3480, STAT 3800 <sup>4</sup>	STAT 4100, STAT 4200, STAT 4520, STAT 4530
MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup> , MATH 1300 <sup>1</sup>	MATH 2300, MATH 2720 <sup>1</sup> , MATH 2730 <sup>1</sup>		
<b>The following courses must be taken in Year 1 or Year 2:</b>		15 credit hours chosen from:	
COMP 1010, STAT 2000, MATH 1200		STAT 3170, STAT 3380, STAT 3490, STAT 4170, STAT 4580, STAT 4590, STAT 4600, STAT 4630, STAT 4690, STAT 4700 with at least 9 credit hours at the 4000 level.	
6 credit hours from the Faculty of Arts, which should include the required "W" course		6 credit hours chosen from:	
		MATH 2202, MATH 2600, MATH 2800, MATH 3230, MATH 3540, MATH 3600, MATH 3700, MATH 3740 (6), MATH 3800, MATH 3810	
		12 credit hours of approved elective courses - including courses to be chosen from an area of application outlined in note 2 below. <sup>2</sup>	



21 credit hours of elective courses - including courses to be chosen from an area of application outlined in note 2 below. <sup>2</sup>	<b>Co-op Requirements:</b>  STAT 3980	<b>Co-op Requirements:</b>  STAT 3990, STAT 4980, STAT 4990 (if a 4th work term selected)
30 Hours	30 Hours	30 Hours
<b>HONOURS DOUBLE MINIMUM 120 CREDIT HOURS</b> By arrangement with the departments concerned		

**4.13.2 b Statistics Program Charts,**

**4.13.2 Statistics**

**FOUR YEAR MAJOR<sup>5</sup> (Including Co-operative Option)** 120 CREDIT HOURS (comprising courses listed in chart below, and electives)

STAT 1000	STAT 2400 (C+)	STAT 3050, STAT 3400 <sup>4</sup> , STAT 3470, STAT 3480, STAT 3800 <sup>4</sup>	STAT 4100, STAT 4200, STAT 4520, STAT 4530
MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup> , MATH 1300 <sup>1</sup>	MATH 2300, MATH 2720 <sup>1</sup> , MATH 2730 <sup>1</sup>		
<b>The following courses must be taken in Year 1 or Year 2:</b>  COMP 1010, STAT 2000, MATH 1200  6 credit hours from the Faculty of Arts, which should include the required "W" course  21 credit hours of elective courses - including courses to be chosen from an area of application outlined in note 3 below. <sup>3</sup>		15 credit hours chosen from:  STAT 3170, STAT 3380, STAT 3490, STAT 4170, STAT 4580, STAT 4590, STAT 4600, STAT 4630, STAT 4690, STAT 4700  6 credit hours chosen from:  MATH 2202, MATH 2600, MATH 2800, MATH 3230, MATH 3540, MATH 3600, MATH 3700, MATH 3740 (6), MATH 3800, MATH 3810  12 credit hours of elective courses - including courses required for the chosen area of application outlined in note 3 below. <sup>3</sup>	
		<b>Co-op Requirements:</b>  STAT 3980	<b>Co-op Requirements:</b>  STAT 3990, STAT 4980, STAT 4990 (if a 4th work term is selected)
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

1 MATH 1310 may be taken in place of MATH 1300; MATH 1510, or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700. MATH 1690 may be taken in place of both MATH 1700 and 1500. MATH 2750 may be taken in place of MATH 2720 and 2730.

2 Of the electives chosen as part of the Honours Degree, 18 credit hours are to be selected from one department which represents a field of application such as: Actuarial Mathematics, Biological Sciences, Microbiology, Economics, Psychology or Sociology. (Mathematics and Computer Science are excluded from this list.) In consultation with the department, combinations of courses from a coherent area of studies may be selected.

3 Of the electives chosen as part of the Major Degree, 15 credit hours must be selected from either, Computer Science and Mathematics, or from one of the following departments: Actuarial Mathematics, Biological Sciences, Microbiology, Economics, Psychology, or Sociology.

4 STAT 3400 and STAT 3800 have corequisites of MATH 2720 and MATH 2730. Therefore students who wish to take STAT 3400 and STAT 3800 should consider taking MATH 1300, MATH 1500 and MATH 1700 in University 1 or Year 2, as they are prerequisite to MATH 2720 and MATH 2730.

5 IMPORTANT: The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.

(The number 6 in brackets indicates a six credit hour course)

**4.13.2 c Statistics Program Charts,**

**4.13.2 Statistics**

**THREE YEAR GENERAL (90 CREDIT HOURS)**

STAT 1000 and STAT 2000	A minimum of 18 credit hours of 2000, 3000, and (or) 4000 level Statistics courses (in addition to STAT 2000) <sup>4</sup>
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**MINOR**



STAT 1000	STAT 2000, STAT 3000 9 additional credit hours of 2000, 3000, or 4000 level Statistics courses <sup>4</sup>
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**NOTES:**  
 1 MATH 1310 may be taken in place of MATH 1300; MATH 1510, or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700. MATH 1690 may be taken in place of both MATH 1700 and 1500. MATH 2750 may be taken in place of MATH 2720 and 2730.  
 2 Of the electives chosen as part of the Honours Degree, 18 credit hours are to be selected from one department which represents a field of application such as: Actuarial Mathematics, Biological Sciences, Microbiology, Economics, Psychology or Sociology. (Mathematics and Computer Science are excluded from this list.) In consultation with the department, combinations of courses from a coherent area of studies may be selected.  
 3 Of the electives chosen as part of the Major Degree, 15 credit hours must be selected from either, Computer Science and Mathematics, or from one of the following departments: Actuarial Mathematics, Biological Sciences, Microbiology, Economics, Psychology, or Sociology.  
 4 STAT 3400 and STAT 3800 have corequisites of MATH 2720 and MATH 2730. Therefore students who wish to take STAT 3400 and STAT 3800 should consider taking MATH 1300, MATH 1500 and MATH 1700 in University 1 or Year 2, as they are prerequisite to MATH 2720 and MATH 2730.  
 5 IMPORTANT: The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.  
 (The number 6 in brackets indicates a six credit hour course)

**4.13.3 Statistics - Actuarial Mathematics Joint Honours Program**

The Department of Statistics and the Warren Centre for Actuarial Studies and Research offer a joint Honours program for students wishing in depth study in Statistics and Actuarial Mathematics.

**Entry Requirements:**

**To enter** the Joint Honours program, students must have completed 24 credit hours with a minimum DGPA of 3.00. Students must also obtain a minimum grade of "B" in one of the following courses: an approved Written English course, (both of) ECON 1010 and ECON 1020, MATH 1300, MATH 1500, MATH 1700 or STAT 1000; and must also obtain a minimum grade of "B" in STAT 2000.

**To graduate** with the B. Sc. Honours degree, a student must achieve a minimum DGPA of 3.00 and a minimum grade of "C+" on all required Actuarial Mathematics (ACT) courses and a grade of "C" on all remaining courses that contribute to the 120 credit hours of the degree.

NOTE: In order to receive course credit for, and examination exemptions from, future Society of Actuaries (SoA) and VEE courses, students must obtain a minimum grade of "B" in the following courses: ECON 1010, ECON 1020, ACC 1100, FIN 2200, STAT 3470, and STAT 3490. Contact the Warren Centre for Actuarial Studies and Research for further information.

Recommended Electives:

ACT 4000, ACT 4150, ACT 4240; FIN 3410; COMP 1010; STAT 4630

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS 120 CREDIT HOURS</b>			
STAT 1000, STAT 2000 (B)	STAT 2400, STAT 3400	STAT 3050, STAT 3480, STAT 3800	STAT 3470 <sup>3</sup> , STAT 3490 <sup>3</sup> , STAT 4100, STAT 4200, STAT 4520, STAT 4530
ECON 1010 <sup>3</sup> , ECON 1020 <sup>3</sup>	ACT 2020, ACT 2120	ACT 2210, ACT 3130, ACT 3230, ACT 3340,	ACT 4060, ACT 4140, ACT 4340
MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>	ACC 1100 <sup>2,3</sup> , FIN 2200 <sup>2,3</sup>	MSCI 2150	
3 credit hour "W" course	MATH 2720 <sup>1</sup> , MATH 2730 <sup>1</sup>		
	MATH 2300 <sup>1</sup>		
6 credit hours of electives	3 credit hours of approved electives	6 credit hours of approved electives	3 credit hours of approved electives
30 Hours	30 Hours	30 Hours	30 Hours



**NOTES:**

<sup>1</sup> MATH 1310 may be taken in place of MATH 1300; MATH 1510, or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700; MATH 1690 may be taken in place of both of MATH 1500 and MATH 1700; MATH 2750 may be taken in place of both of MATH 2720 and MATH 2730; MATH 2352 (6) may be taken in place of MATH 2300.

<sup>2</sup> Students are strongly urged to complete ACC 1100 in Year 1 when possible FIN 2200 may be taken in Year 2, 3 or 4; however, it is strongly recommended that it be completed in Year 2. Note that ACC 1100 is a prerequisite for FIN 2200.

<sup>3</sup> In order to receive course credit for, and examination exemptions from, future Society of Actuaries (SoA) and VEE courses, students must obtain a minimum grade of "B" in these courses.

(Letters in brackets indicate minimum prerequisite standing for further study.)

**4.13.4 Statistics - Mathematics Joint Honours Program**

The departments of Statistics and Mathematics offer a joint Honours program for students wishing in depth study in Statistics and Mathematics.

**To enter** the Honours program students must have satisfied the Faculty of Science requirements for entry to the program, and have completed STAT 1000, MATH 1300 and either MATH 1690, or MATH 1500 and MATH 1700 or any equivalent with a minimum grade of "B" in each of STAT 1000 and MATH 1690 (or a "B" average in MATH 1500 and MATH 1700).

**To graduate** with the B. Sc. Honours degree, a student must achieve a minimum DGPA of 3.00 and a minimum grade of "C+" in each of the Honours Program Specific courses, and a minimum grade of "C" on all remaining courses that contribute to the 120 credit hours of the degree. See the Calendar entry for each of the Department of Statistics and the Department of Mathematics for the Honours Program Specific courses.

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS 120 CREDIT HOURS</b> (comprising courses listed in chart below, and electives)			
MATH 1300 <sup>1</sup> (B), MATH 1690 (6) (B) (or MATH 1500 <sup>1</sup> and MATH 1700 <sup>1</sup> (B))	STAT 2000 <sup>2</sup> , STAT 2400  MATH 2202, MATH 2352 (6), MATH 2600, MATH 2750 (6), MATH 2800	STAT 3050, STAT 3470, STAT 3480, STAT 3400, STAT 3800	STAT 4100, STAT 4520, STAT 4530
The following courses must be taken in Year 1 or Year 2:  STAT 1000 (B), COMP 1010  6 credit hours from the Faculty of Arts, which should include the required "W" course  12 credit hours of approved electives		Plus a total of 30 credit hours from: MATH 2400 and any 3000 / 4000 level Mathematics courses, which must include at least 3 credit hours at the 4000 level and must also include MATH 3230, MATH 3740 (6)(or MATH 3760 (6)), MATH 3350 (6) (or MATH 3300), MATH 3700 (or MATH 3710), MATH 3400 and MATH 3800  6 credit hours of approved electives	
30 Hours	30 Hours	30 Hours	30 Hours

**NOTES:**

<sup>1</sup> MATH 1310 may be taken in place of MATH 1300; MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700.

<sup>2</sup> STAT 2000 may be taken in Year 1.

(Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

**4.13.5 Statistics - Economics Joint Honours Program**

The Department of Statistics along with the Department of Economics (Faculty of Arts) offer a Joint Honours program for students wishing in depth study in Statistics and Economics. For Economics course listings, refer to the Faculty of Arts chapter in the Calendar.

Students will normally take STAT 2000 and STAT 2400 in second year and enter Honours in Year 3.

**To enter** the Joint Honours Statistics Economics program, the student must have a minimum grade of "B" in both of ECON 1010 and ECON 1020 (or ECON 1210 and ECON 1220) and STAT 2400; and an average grade of "B" or better with a minimum grade of "C+" in each of MATH 1500 and MATH 1700 or any equivalents and have satisfied the Faculty of Science requirements for entry to the honours program.

YEAR 1	YEAR 2	YEAR 3	YEAR 4
<b>JOINT HONOURS 120 CREDIT HOURS</b>			
ECON 1010 (B) and ECON 1020 <sup>2</sup> (B)	ECON 2700, ECON 2800	ECON 3700, ECON 3800  STAT 3470, STAT 3480, STAT	ECON 4120, ECON 4130  STAT 4100, STAT 4520, STAT



STAT 1000	STAT 2000, STAT 2400	3490, STAT 3400, STAT 3800	4530, STAT 4580
MATH 1300 <sup>1</sup> , MATH 1500 <sup>1</sup> , MATH 1700 <sup>1</sup>	MATH 2202, MATH 2352 (6), MATH 2750 (6)	One of: MATH 3740 (6) or MATH 3760 (6)	
COMP 1010			
9 credit hours of electives including the required "W" course.	3 credit hours of approved Economics electives <sup>3</sup>	3 credit hours of approved Economics electives <sup>3</sup>	12 credit hours of approved Economics electives <sup>3</sup>
30 Hours	30 Hours	30 Hours	30 Hours
<b>NOTES:</b> 1 MATH 1310 may be taken in place of MATH 1300; MATH 1510, or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place MATH 1700. 2 ECON 1210 and ECON 1220 may be used in place of ECON 1010 and ECON 1020. 3 Of the 18 credit hours in Economics electives in Years 2, 3 and 4, no more than 6 credit hours may be at the 2000 level or below; ECON 2530 and ECON 3180 are recommended in Year 2 or 3. The normal prerequisite for ECON 3180 is ECON 3170, which will be waived for students in this program who have completed Year 1. (Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)			

variables. This course is not available to any student who has previously obtained credit for STAT 3500. Prerequisites: STAT 1000 or STAT 1001 (005.100) (C); and one of MATH 1700, MATH 1701 (136.170), or MATH 1690 (136.169) (C).

#### 4.13.6 Statistics -1000 Level

**STAT 1000** Basic Statistical Analysis 1 Cr.Hrs.3  
(Formerly 005.100) An introduction to the basic principles of statistics and procedures used for data analysis. Topics to be covered include: gathering data, displaying and summarizing data, examining relationships between variables, sampling distributions, estimation and significance tests, inference for means. Not to be held with STAT 1001, STAT 2220 (005.222). Prerequisite: Any grade 12 or 40S Mathematics, or equivalent.

#### 4.13.6 Statistics -2000 Level

**STAT 2000** Basic Statistical Analysis 2 Cr.Hrs.3  
(Formerly 005.200) The study of estimation and hypothesis testing procedures for means and proportions in one, two and multiple sample situations, introduction to the analysis of variance; regression and correlation analysis; optional topics may include nonparametric procedures, design of experiments, probability models. Not to be held with STAT 2001. Prerequisite: STAT 1000 (005.100) (C), or STAT 1001 (C).

**STAT 2220** Contemporary Statistics for Engineers Cr.Hrs.3  
(Lab Required) (Formerly 005.222) Descriptive statistics, basic probability concepts, special statistical distributions, statistical inference-estimation and hypothesis testing, regression, reliability, statistical process control. Not to be held with STAT 1000, STAT 1001, or 005.100. Prerequisite: a "C" or better in one of MATH 1690 (136.169), the former MATH 1680 (136.168), MATH 1700, MATH 1701 (136.170), MATH 1710 (136.171), or the former 136.173.

**STAT 2400** Introduction to Probability I Cr.Hrs.3  
(Lab Required) Basic probability, discrete distributions including binomial, hypergeometric, geometric and Poisson, joint distributions, continuous distributions, statistical inference and applications involving discrete random

#### 4.13.6 Statistics -3000 Level

**STAT 3000** Applied Linear Statistical Models Cr.Hrs.3  
Applied Linear regression and analysis of variance for designed experiments. This course is not for use in the Honours or Major degree programs in Statistics. Not to be held with STAT 3470 (005.347), STAT 3480 (005.348), the former STAT 3120 (005.312) or the former STAT 3130 (005.313). Prerequisite: STAT 2000 (005.200) or STAT 2001 (005.201) (C).

**STAT 3050** Introduction to Probability Theory and Its Applications Cr.Hrs.3  
(Formerly 005.305) Development of the basic concepts of probability theory and application in areas of biostatistics, actuarial science, reliability theory, queuing theory. Prerequisites: STAT 3400 or the former STAT 3500 (005.350) (C); and MATH 2720 or MATH 2721(136.272, 136.270) (C); and MATH 2730 or MATH 2731 (136.273, 136.271) (C).

**STAT 3120** Topics in Regression Analysis Cr.Hrs.3  
(Formerly 005.305) Development of the basic concepts of probability theory and application in areas of biostatistics, actuarial science, reliability theory, queuing theory. Prerequisites: 005.350 (or the former 005.331 or 005.341) (C) and ((MATH 2720 or MATH 2721 or 136.272) and (MATH 2730 or MATH 2731 or 136.273)) (or the former 136.270 and 136.271) (C).

**STAT 3170** Statistical Quality Control Cr.Hrs.3  
(Formerly 005.317) Techniques for quality improvement through the use of statistical process control. Topics will include acceptance sampling, Pareto diagrams, boxplots, normal probability plots, control charts (EWMA and CUSUM), measurements of process capability and process performance. Prerequisite: STAT 2000 or STAT 2001 (005.200) (C).

**STAT 3380** An Introduction to Nonparametric Statistics Cr.Hrs.3



(Formerly 005.338) Parametric versus nonparametric inference; inference using ranks and order statistics; tolerance intervals; contingency tables; goodness-of-fit tests; examples from the social and physical sciences.  
Prerequisite: STAT 2000 or STAT 2001 (005.200) (C).

**STAT 3400** Introduction to Probability II Cr.Hrs.3  
(Lab Required) Continuation of STAT 2400. Continuous distributions, properties of common distributions, distributions of functions of random variables. Not to be held with the former STAT 3500 (005.350). Prerequisite: STAT 2400(C). Prerequisite or Concurrent requirement: one of MATH 2720, MATH 2721, MATH 2730, or MATH 2731.

**STAT 3470** Statistical Methods for Research Workers 1 Cr.Hrs.3  
(Formerly 005.347) Linear regression, multiple regression, correlation analysis, introduction to one way analysis of variance, some related topics. Not to be held with STAT 3000 or the former STAT 3120 (005.312). Prerequisite: STAT 2000, STAT 2001 (005.200) (C). Prerequisite or Concurrent Requirement: STAT 3400 or the former STAT 3500 (005.350).

**STAT 3480** Statistical Methods for Research Workers 2 Cr.Hrs.3  
(Formerly 005.348) Analysis of variance, randomized block design, nested and Latin square experiments, analysis of covariance. Not to be held with STAT 3000 or the former STAT 3130 (005.313). Prerequisite: STAT 3470 (005.347) (C).

**STAT 3490** Time Series Analysis Cr.Hrs.3  
(Formerly 005.349) Trend and seasonal components, exponential smoothing by the multiple regression method, the Box-Jenkins Methodology, analysis of seasonal data. Prerequisite: a grade of "C" or better in one of: STAT 3470 (005.347), STAT 3000 or the former STAT 3120 (005.312).

**STAT 3600** Intermediate Statistical Theory 2 Cr.Hrs.3  
(Formerly 005.360) Transformations, sampling distributions, convergence and introduction to estimation and hypothesis testing. Not to be held with the former 005.331 or STAT 3410 (or 005.341). Prerequisite: STAT 3500 (or 005.350) (C). Prerequisite or concurrent requirement : Whichever of MATH 2720 (or MATH 2721) or MATH 2730 (or MATH 2731) or the former 136.270 and 136.271 not yet taken.

**STAT 3800** Mathematical Statistics Cr.Hrs.3  
(Lab Required) Multivariate distributions and transformations, order statistics, sampling distributions, convergence, introduction to statistical inference. Not to be held with the former STAT 3600 (005.360). Prerequisite: STAT 3400 or the former STAT 3500 (005.350) (C). Prerequisite or Concurrent requirement: Whichever of MATH 2720 (MATH 2721) or MATH 2730 (MATH 2731) not yet taken.

**STAT 3980** Work Term 1 Cr. Hrs. 0  
Work assignment in business, industry, or government for students registered in the Statistics Honours or Major Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail grade only). Prerequisites: [STAT 3470](#) (C) and [STAT 3480](#) (C).

**STAT 3990** Work Term II Cr.Hrs.0  
Work assignments in business, industry or government for students registered in the Statistics Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail). Prerequisite: STAT 3980 (Pass).

#### 4.13.6 Statistics -4000 Level

**STAT 4100** Statistical Inference 1 Cr.Hrs.3  
Introduction to methods of estimation, including asymptotic and Bayesian methods. Not to be held with the former STAT 4140 (005.414). Prerequisite: STAT 3800 or the former STAT 3600 (005.360).

**STAT 4170** Lifetime Data Analysis Cr.Hrs.3  
(Formerly 005.417) An introduction to basic principles and techniques for lifetime data analysis in biostatistics and reliability, with emphasis on theory and applications. Topics to be covered include: censoring, truncation, survival and hazard functions, parametric and nonparametric methods, proportional hazards regression. Prerequisites: STAT 3480 (005.348) (C); and either STAT 3800 or the former STAT 3600 (005.360) (C); or consent of department.

**STAT 4200** Statistical Inference 2 Cr.Hrs.3  
Introduction to methods of hypothesis testing, including asymptotic and Bayesian methods. Not to be held with the former STAT 4140 (005.414). Prerequisite: STAT 4100.

**STAT 4520** Sampling Techniques 1 Cr.Hrs.3  
(Formerly 005.452) A development of sampling theory for use in sample survey problems, in regression estimates, in systematic sampling, sources of errors in surveys. Prerequisites: STAT 3800 or the former STAT 3600 (005.360) (C); and STAT 3480 (005.348); or consent of department.

**STAT 4530** Design of Experiments 1 Cr.Hrs.3  
(Formerly 005.453) Objectives in designing experiments; designs commonly used in research including analysis and an introduction to the construction of designs. Prerequisites: STAT 3800 or the former STAT 3600 (005.360) (C); and STAT 3480 (005.348) (C); or consent of department.

**STAT 4580** Sampling Techniques 2 Cr.Hrs.3  
(Formerly 005.458) A mathematical treatment of some advanced topics in sampling theory. Multistage sampling plans and other selected topics. Prerequisite: STAT 4520 (005.452) (C) or consent of department.

**STAT 4590** Design of Experiments 2 Cr.Hrs.3  
(Formerly 005.459) The theory and analysis of experimental designs treated in STAT 4530 (005.453) and more advanced designs; construction of designs. Prerequisite: STAT 4530 (005.453) (C) or consent of department.

**STAT 4600** Statistics Topics 1 Cr.Hrs.3  
(Formerly 005.460) Topics of current interest in Statistics that will vary with the needs and interests of students and Faculty. Prerequisite: STAT 3800 or the former STAT 3600 (005.360) (C); or consent of department.

**STAT 4630** Stochastic Processes Cr.Hrs.3  
(Formerly 005.463) An introduction to stochastic processes.



Prerequisite: STAT 3050 (005.305) (C); and STAT 3800 or the former STAT 3600 (005.360) (C); or consent of department.

**STAT 4690** Applied Multivariate Analysis Cr.Hrs.3 (Formerly 005.469) The course will emphasize applications of various techniques in multivariate analysis and gaining familiarity with the relevant programs in statistical packages, i.e., SAS, BMDP. Prerequisites: STAT 3480 (005.348) (C); and a "C" or better in one of MATH 2300 (136.230), MATH 2301, MATH 2352, or the former MATH 2350 (136.235); or consent of instructor.

**STAT 4700** Statistical Consulting Cr.Hrs.3 (Formerly 005.470) The role of a Statistics Consultant. Practical consulting experience. This course is normally open to fourth year and graduate students in Statistics. Prerequisites: STAT 3800 or the former STAT 3600 (005.360) (C); and STAT 3480 (005.348); or consent of department. Prerequisites or concurrent requirements: STAT 4520 and STAT 4530.

**STAT 4980** Work Term III Cr.Hrs.0  
Work assignments in business, industry or government for students registered in the Statistics Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month

professional assignment. (Pass/Fail). Prerequisite: STAT 3990 (Pass).

**STAT 4990** Work Term IV Cr.Hrs.0  
Work assignments in business, industry or government for students registered in the Statistics Honours or Major Cooperative program. Requires submission of a written report covering the work completed during the four-month professional assignment. (Pass/Fail). Prerequisite: STAT 4980 (Pass).

**4.14 Courses Offered in Other Faculties and Schools Acceptable**

All courses acceptable for credit in any degree program at the University of Manitoba are acceptable for credit in Science (excluding Pass/Fail courses) subject to overall degree requirements. All courses will be included on admission to the Faculty and will be applied toward the elective requirement in all degree programs offered in Science. For , including any prerequisites and/or restrictions, see the chapter entitled in this Calendar.

Students are reminded that normally a maximum of 30 credit hours (General Degree) or 36 credit hours (Major Degree) from courses offered by Faculties or Schools other than the Faculty of Science can contribute to degree requirements.

**4.15 Resources for Students Interested in Science Related Professional Schools or Faculties**

Program	University	Website	Phone Number
U of Manitoba Admissions Office		<a href="http://umanitoba.ca/student/admissions/">umanitoba.ca/student/admissions/</a>	204.474.8808
Agriculture and Food Science	Manitoba	<a href="http://umanitoba.ca/faculties/afs/">umanitoba.ca/faculties/afs/</a>	204.474.7525
Dental Hygiene	Manitoba	<a href="http://umanitoba.ca/faculties/dentalhygiene/">umanitoba.ca/faculties/dentalhygiene/</a>	204.789.3683
Dentistry	Manitoba	<a href="http://umanitoba.ca/faculties/dentistry/">umanitoba.ca/faculties/dentistry/</a>	204.789.3631
Education	Manitoba	<a href="http://umanitoba.ca/faculties/education/">umanitoba.ca/faculties/education/</a>	204.474.9004
Engineering	Manitoba	<a href="http://umanitoba.ca/faculties/engineering/">umanitoba.ca/faculties/engineering/</a>	204.474.9807
Environment	Manitoba	<a href="http://umanitoba.ca/faculties/environment/">umanitoba.ca/faculties/environment/</a>	204.474.7252
Human Ecology	Manitoba	<a href="http://umanitoba.ca/faculties/human_ecology/">umanitoba.ca/faculties/human_ecology/</a>	204.474.8508
Kinesiology	Manitoba	<a href="http://umanitoba.ca/faculties/kinrec/">umanitoba.ca/faculties/kinrec/</a>	204.474.9747
Management	Manitoba	<a href="http://umanitoba.ca/management/">umanitoba.ca/management/</a>	204.474.9353
Medical Rehabilitation	Manitoba	<a href="http://umanitoba.ca/medrehab/">umanitoba.ca/medrehab/</a>	204.789.3897
Medicine	Manitoba	<a href="http://umanitoba.ca/medicine/">umanitoba.ca/medicine/</a>	204.789.3557
Nursing	Manitoba	<a href="http://umanitoba.ca/nursing/">umanitoba.ca/nursing/</a>	204.474.7452
Pharmacy	Manitoba	<a href="http://umanitoba.ca/pharmacy/">umanitoba.ca/pharmacy/</a>	204.474.9306
Graduate Studies	Manitoba	<a href="http://umanitoba.ca/faculties/graduate_studies/">umanitoba.ca/faculties/graduate_studies/</a>	204.474.9377
<b>Related Programs not offered at the U of Manitoba</b>			
Optometry	Waterloo	<a href="http://www.science.uwaterloo.ca/programs/optometry.html">http://www.science.uwaterloo.ca/programs/optometry.html</a> <a href="http://optometry.uwaterloo.ca/">http://optometry.uwaterloo.ca/</a>	519.888.4567
Veterinary Medicine	Saskatchewan	<a href="http://www.usask.ca/wcvm/">http://www.usask.ca/wcvm/</a> <a href="http://www.usask.ca/wcvm/">http://www.usask.ca/wcvm/</a>	306.966.7447
Meteorology		<a href="http://www.msc-smc.ec.gc.ca/">http://www.msc-smc.ec.gc.ca/</a>	



## Faculty of Social Work

**Dean:** Harvy Frankel

**Associate Dean(s):** Kathy Levine (Undergraduate); Diane Hiebert-Murphy (Graduate)

**Campus Address/General Office:** 521 Tier Building, Fort Garry Campus

**Telephone:** (204) 474-7050

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**Academic Staff:** Please refer to the Faculty's website [umanitoba.ca/faculties/social\\_work](http://umanitoba.ca/faculties/social_work)

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#### SECTION 1: Degree Offered

Historically, the social work profession has focused on the well-being of people as well as the social structures and conditions that prevent a just and equal society. The Bachelor of Social Work Program is a professional program that is designed to prepare generalists who are knowledgeable of social work theories, and who can demonstrate skills related to practice, research, and social policy analysis. Students and graduates undertake these activities in accordance with the Canadian Association of Social Workers' Code of Ethics. The program is accredited by the Canadian Association for Social Work Education.

Graduates have competence for entry level social work positions in a variety of different practice areas. The program is based on the principles of social justice, human rights, and anti-oppression, with an emphasis on critical thinking and understanding the structural roots of social problems. Foundation courses are grounded in critical theoretical frameworks including Indigenous worldviews, feminism, and anti-racism.

The program is offered at multiple geographic sites including the Fort Garry Campus, the William Norrie Centre (Inner-city), the Université de Saint-Boniface, and Thompson, Manitoba as well as by Distance Delivery.



### 1.1 Program,

Degree	*Years to Complete	*Total Credit Hours
Bachelor of Social Work (Full-Time)	4	123
Bachelor of Social Work (Concentrated)**	2	123
Bachelor of Social Work (Part-Time)	Up to 9	123

\*This includes one year (30 credit hours) of prior university study.

\*\*Please see 4.1 B

### 1.2 Concentration in Child and Family Services,

The Faculty offers the Concentration in Child and Family Services. Students are required to complete prescribed electives and core courses related to child and family services. For more information and a detailed list of concentration requirements please refer to the Faculty's website.

Upon the successful completion of these requirements, a notation will be added to the student's transcript.

### 1.3 Interfaculty Option in Aging,

The Interfaculty Option in Aging is offered by the following faculties: Arts, Human Ecology, Nursing, Kinesiology and Recreation Management, Clayton H. Riddell Faculty of Environment, Earth and Resources, and Social Work. To complete the option, students will complete each of the following requirements: a) 2610\* Health and Physical Aspects of Aging; b) 2650\* The Social Aspects of Aging; c) one field placement SWRK 3150 or SWRK 4120 in aging d) one Field Focus of Social Work Practice course (SWRK 4200 or SWRK 4300) in aging. Students are encouraged to take courses from the participating units other than Social Work.

**NOTE:** \*These courses are offered on a rotational basis by participating units.

Upon the successful completion of these requirements, a notation will be added to the student's transcript. For further information on the Interfaculty Option in Aging, please refer to the Faculty's website [umanitoba.ca/faculties/social\\_work](http://umanitoba.ca/faculties/social_work)

## SECTION 2: Admission Requirements

The following is a summary of the admission requirements to the Bachelor of Social Work. Equivalent academic courses completed at recognized universities elsewhere will be considered. All admission requirements, as well as application deadline dates and forms, are included in an applicant information bulletin that is available from the Admissions Office, Enrolment Services, 424 University Centre; this information is also posted on the university's website.

### 2.1 Admission to the Fort Garry Social Work Program, Admission Requirements

Completion of 30 credit hours of university level courses

which are acceptable to the University of Manitoba.

The written English and mathematics requirements are recommended to be completed as part of University 1. If these requirements are not met in University 1 (i.e. the first 30 credit hours) they must be completed prior to graduation. Minimum GPA for consideration for all applicants (including Educational Equity applicants): 2.5

A Criminal Record Statement and a Child Abuse Registry (CAR) check (for a record of those registered as an offender) must be completed following selection.

Selection criteria: Two applicant pools are created; 60% of all spaces are allocated to applicants with the highest grades, and 40% of all spaces are allocated to applicants based on the Education Equity initiative.

### Concentrated Program

All applicants wishing to complete the program in two years of full-time study must have completed a minimum of 51 credit hours of university study (which are acceptable to the University of Manitoba) prior to admission to the BSW program. Applicants wishing to complete the degree through the two year concentrated program must have an Adjusted Grade Point Average of 3.00 from all previous university study. In the event that three credit hours in each of written English and mathematics have not been completed as part of the 51 credit hours of previous university study, they must be completed within the first year of the two-year program. The deadline for submission of applications in March 1st (for September start date).

### The Selection Process

The selection process is designed to accomplish three objectives: to treat applicants fairly and equitably, to provide the diversity of practitioners required by the profession, and to provide for an efficient admissions process. The faculty selects applicants to the Fort Garry Campus B.S.W. program through two categories as described below.

Academic Achievement Category: 60% of all available positions are awarded on the basis of highest Adjusted Grade Point Average.

Educational Equity Initiative: 40% of all available positions are allocated to those eligible for inclusion in one or more of the Educational Equity Priority Groups and awarded on the basis of highest Adjusted Grade Point Average.

The purpose of the Educational Equity initiative is to achieve equality in professional education so that no person shall be denied educational opportunities or benefits for reasons unrelated to ability. In the fulfillment of this goal, the aim is to correct the conditions of disadvantage in professional education experienced by Aboriginal peoples, persons with disabilities, gender and sexual minorities, immigrants and refugees to Canada, and persons who are, because of their



race or colour, a visible minority in Canada. Giving effect to the principle of educational equity means more than treating persons in the same way; it also requires special measures and the accommodation of difference. Details of the Educational Equity initiative are provided in the application information bulletin.

Students in the Fort Garry Social Work Program must successfully meet the graduation criteria set for all BSW students in the Faculty of Social Work.

### 2.2 Admission to the Inner City Social Work Program ,

The Inner City Social Work (B.S.W.) ACCESS Program at the William Norrie Centre is an inner-city extension of the Faculty of Social Work. Students admitted to the centre are accepted directly into a four-year B.S.W. program, and do not require prior university study.

The objective of this program is to enhance the accessibility of the B.S.W. program by preparing as social workers those mature students who have had inner-city or similar social service experience, but who lack the normal university entrance requirements. Special academic and social support is provided to students admitted to the program. Staff assists candidates in arranging funding resources.

All students complete a total of 123 credit hours of university study. Full time or part-time study is offered.

Admission to the centre is limited. Applicants to the full-time program must be 21 years old, low income, and residents of Winnipeg at the time of application. The deadline date for submitting applications is early February.

A part-time B.S.W. Access program is offered to individuals who meet the above criteria, work for a Winnipeg or Aboriginal agency, and/or have two years employment in human service fields. Deadline for applications for part-time studies is mid January.

Students at the centre must successfully meet the graduation criteria set for all BSW students in the Faculty of Social Work. For further information, contact: Inner City Social Work Program, 485 Selkirk Avenue, Winnipeg, Manitoba, R2W 2M6; telephone: (204) 668-8160.

### 2.3 Admission to the Northern Social Work Program ,

The Northern Bachelor of Social Work (B.S.W.) program, based in Thompson Manitoba, is an extension of the Fort Garry Faculty of Social Work. Students are admitted directly into a four-year B.S.W. program and do not require prior university study.

All students complete a total of 123 credit hours of university study. Full time or part-time study is offered.

The objective of this program is to enhance the accessibility of the B.S.W. program by preparing as social workers mature students who, without the support of the program, would be unable to successfully complete a university degree due to lack of financial resources, lack of academic qualifications and remote location. Special academic and personal support is provided to students admitted to the program, as well as some assistance in arranging funding resources.

Students who have completed 30 credit hours of university level courses and have a minimum GPA of 2.5 may apply as External Students.

Admission to the Northern Social Work program is limited. Applicants must meet specified northern residency requirements. The deadline date for submitting applications is March 1 (classes begin in September).

Students in the Northern Social Work program must successfully meet the graduation criteria set for all BSW students in the Faculty of Social Work. For further information, contact the Director, Faculty of Social Work at Thompson, 3 Station Road, Thompson, Manitoba, R8N 0N3; telephone: (204) 677-1450.

### 2.4 Admission to the Distance Delivery Social Work Program

The Faculty of Social Work is committed to the accessibility of social work education. The faculty has extended the concept of accessibility to include geographical accessibility through the delivery of the B.S.W. based on two approaches: (1) to individuals by means of an online study program and (2) to community-based groups using the cohort method.

The Distance Delivery B.S.W. program is intended to encourage individuals who are employed in the social services and living outside of Winnipeg, but who may not have had the opportunity to pursue professional social work education.

All students complete a total of 123 credit hours of university study. Full time or part-time study is offered.

Delivery methods for the online study component of the program include a combination of audioconference sessions and online study. Access to high speed internet is required.

All course examinations are scheduled and arranged by the university's Registrar's Office to take place in the student's community.

Delivery of the program to the community-based cohorts utilizes the face-to-face delivery with the option of a combination of face-to-face, audioconference and online study.

Applicants to the Distance Delivery B.S.W. program must meet all three of the following requirements to be admitted into the program:

- A minimum of two years of social service related work experience, within the last five years;
- Residency outside of Winnipeg;
- The university admission requirements for either a regular student or a mature student.

Complete and detailed admissions information is available on our web site at [umanitoba.ca/faculties/social\\_work](http://umanitoba.ca/faculties/social_work) or by calling the Faculty of Social Work Distance Delivery BSW Student Advisor at (204) 474-6070.

The deadline for submission of applications in March 1<sup>st</sup> (for September start date).

Students in the Distance Delivery B.S.W. program must successfully meet the graduation criteria set for all BSW students in the Faculty of Social Work.



### 2.5 The Université de Saint-Boniface,

The Université de Saint-Boniface, in conjunction with the University of Manitoba, now offers a French language Bachelor of Social Work program. Please contact Program Coordinator at 237-1818 ext. 447 for more information.

### 2.6 Special Student Admission,

A Special Student in Social Work is one who wishes to take undergraduate Social Work courses with no intentions of proceeding to a B.S.W. degree at the present time. In addition, the student is not currently registered at any other university. Students seeking admission as Special Students may re-request information from the Faculty of Social Work, 521 Tier Building; telephone (204) 474 7050. Criteria for admission are:

- Successful completion of a minimum of 30 credit hours of university level courses which are acceptable to the University of Manitoba;

and

- Adjusted Grade Point Average of 2.5 (C+).

Courses available to Special Students and students enrolled in other faculties and schools at the University of Manitoba:

#### Required Social Work Courses:

SWRK 1310 Introduction to Social Welfare Policy Analysis  
 SWRK 2080 Interpersonal Communication Skills  
 SWRK 2090 Human Behaviour and Social Work Practice  
 SWRK 2110 Emergence of the Canadian Welfare State  
 SWRK 2130 Comparative Social Welfare Systems  
 SWRK 3130 Contemporary Canadian Social Welfare  
 SWRK 3100 Systematic Inquiry in Social Work

#### Elective Social Work Courses:

SWRK 2050 Community & Organizational Theory  
 SWRK 2070 Small Group Dynamics  
 SWRK 4050 Selected Topics in Social Work  
 SWRK 4080 Current Issues in Social Welfare

**NOTE:** Special and non-Social Work students are required to abide by the same pre-/corequisite policy that applies to B.S.W. students.

## SECTION 3: Faculty Academic Regulations

All students are asked to note that some academic policies and regulations are under review and are subject to change. The provisions of the chapter, General Academic Regulations and Requirements, and the chapter, University Policies, apply to all students. In addition, the Faculty of Social Work has regulations and requirements, published below, that apply specifically to its students.

### 3.1 Prerequisite and Corequisite Policy ,

The faculty has established a set of pre-/corequisite requirements to assist students in planning their program of

Students are reminded they must submit an official transcript (one bearing the university seal) to the BSW Student Advisor along with the application form on their appointment day (University of Manitoba students need only provide a student history). An application fee applies. Once admitted as a Special Student, students will:

- Be limited to completion of nine credit hours of required social work courses plus SWRK 1310 and SWRK 2080.
- Be prohibited from adding courses in the Faculty of Social Work until August (refer to Aurora Student for specific dates).
- Have all courses classified as "SS," which means that grades for these courses may not generate a Grade Point Average.

### Students Enrolled in other Faculties/Schools

Students currently enrolled in other faculties or schools at the University of Manitoba may register for Social Work courses provided they have completed a minimum of 30 credit hours of university study and achieved a minimum Cumulative Grade Point Average of 2.5. These students will also be limited to completion of SWRK 1310 and SWRK 2080 plus nine credit hours of required social work courses.

study.

All students must abide by the pre- and corequisite requirements for all courses.

Any exceptions to the pre- and corequisite policy MUST be approved by the Committee on Academic Standings prior to course registration. Should a student violate the pre- and corequisite policy, credit(s) for the course(s) will be deleted from the student's academic record. For detailed information, please refer to the B.S.W. Student Handbook.

### 3.2 Residence Requirements for a Degree Program,

The general university residence requirement applies to the Faculty of Social Work.



### 3.3 Scholastic Progress ,

Except in circumstances covered in the official regulations referred to below, clear standing in the faculty requires both the Degree Grade Point Average and Subject Grade Point Average of 2.5 (C+) at the end of each term. A minimum grade of 2.0 (C) is required for all Social Work courses. The passing grades for electives taken in other faculties or schools are those required by the faculties or schools concerned. Complete statements of the regulations governing scholastic progress in the Faculty of Social Work are published in the B.S.W. Student Handbook. Students wishing to do so may consult the policy governing scholastic progress as written in the B.S.W. Student Handbook with the Chair of the Committee on Academic Standings, or the Dean. In the event of any question or dispute, this set of regulations shall be considered the official version. Directors of off-campus programs and the Student Services and Admissions/ Advising Office at Fort Garry Campus will advise students on issues concerning scholastic progress.

### 3.4 Professional Unsuitability Bylaw ,

The Senate has approved a bylaw granting authority to the faculty to require a student to withdraw for reasons of professional unsuitability (see the chapter, General Academic Regulations and Requirements, Section 6.2.3.). The bylaw is published in the B.S.W. Student Handbook. Students are reminded of their obligation to be familiar with all regulations governing their continued progress in the program.

### 3.5 Dean's Honour List,

BSW student eligibility for the Dean's Honour List is considered on a term by term basis. To qualify for the Dean's Honour List a student must:

- Have completed a minimum of 9 credit hours in the term under consideration, of which a minimum 6 credit hours must be with a standard grade.
  - and
  - Have achieved a minimum Term GPA of 3.6
- Pass/Fail courses are included in the credit hour count.

### 3.6 Appeal of Grades,

The general university policy for appeal of assigned grades applies to the Faculty of Social Work. As well, the Faculty Council has approved a Social Work policy on the appeal of assigned grades and term work. The policy is outlined in the

### 3.9 Courses Open to Challenge for Credit ,

The Faculty of Social Work accommodates those students who are qualified and who can demonstrate acceptable knowledge and skill, by allowing them to challenge certain Social Work courses. They are:

SWRK 2080 Interpersonal Communication Skills

SWRK 3100 Systematic Inquiry in Social Work

SWRK 3130 Contemporary Canadian Social Welfare

Information on the procedures for challenge is available in the B.S.W. Student Handbook. The dates at which courses may be challenged are given in the academic schedule of the Undergraduate Calendar.

B.S.W. Student Handbook. The Faculty Council has established the Academic Standing Appeals Committee to deal with these matters.

### 3.7 Distance Courses Open to Fort Garry Campus and Inner City Social Work Students,

B.S.W students who are enrolled in the Fort Garry Campus or Inner City Social Work programs may take up to six credit hours of selected social work courses through Distance Delivery. The following courses are excluded: SWRK 2080, SWRK 3100, SWRK 3140, SWRK 4200 and SWRK 4300. If any Fort Garry Campus or Inner City Social Work program students are enrolled in the above mentioned practice courses they will be withdrawn.

### 3.8 Opting Into Field and Practices of the Two-Year Plan,

Students may apply for "opt-in" by fulfilling the following conditions:

- Consult with and submit written request for "Opt-in" to the Coordinator of Student Services and Admission/Advising Office and Field Coordinator no later than February 1.
- Successfully complete all Social Work courses required by the end of Winter term prior to opt-in year (except for SWRK 4210 Feminist Perspectives on Social Work Practice, SWRK 4220 Aboriginal People and Social Work Practice, SWRK 4200 Field Focus of Social Work Practice 1, SWRK 4300 Field Focus of Social Work Practice 2, SWRK 3150 Field Instruction 1 and SWRK 4120 Field Instruction 2) and
- Successfully complete all elective courses (including written English and mathematics requirements) by the end of Winter term prior to opt-in year.
- Achieve a minimum Degree Grade Point Average of 3.00 at point of opting in.
- Achieve a minimum Subject Grade Point Average of 3.00 at point of opting in.

Final approval to opt-in is also based on faculty resources: space availability in SWRK 4210 Feminist Perspectives on Social Work Practice and SWRK 4220 Aboriginal People and Social Work Practice during Summer Session; space availability in SWRK 4200 Field Focus of Social Work Practice 1 and SWRK 4300 Field Focus of Social Work Practice 2 courses in Fall and Winter terms; and the availability of concentrated field placements.



**3.10 Credit for Social Work Courses Taken at Other Universities,**

The Faculty of Social Work supports the principle of granting credit for social work courses taken within the last nine years in accredited programs leading to professional social work qualification. Information on granting credits for social work courses is available in the B.S.W. Student Handbook. The Faculty of Social Work has articulated agreements with specific diploma and certificate programs. Please consult the B.S.W. Student Handbook for detailed information.

**Section 4: Program and Graduation Requirements**

When planning your workload, allow approximately two hours of study/reading time for each hour of class time. It is also advisable to schedule time to use the library. The

faculty will offer as many evening courses as possible each year.

**4.1 Curriculum Outline  
 A) Three-Year Plan**

This plan allows a Fort Garry Campus student who has completed 30-50 credit hours of general university study prior to admission, to combine Social Work professional courses with other university courses. It requires three years of full-time study, after admission to the faculty, to complete the requirements for the B.S.W. degree. A student who has already completed the 51 credit hours of general university study which are acceptable to the University of Manitoba may also register for this program ignoring the elective requirements.

Three-Year Plan Example

Course No.	Course Name	Credit Hours	Year
SWRK 1310	Introduction to Social Welfare Policy Analysis	3	1
SWRK 2080	Interpersonal Communication Skills	3	1
SWRK 2090	Human Behaviour and Social Work Practice	6	1
SWRK 3140	Introduction to Social Work Practice	3	1
SWRK 3150	Field Instruction 1	12	2
SWRK 4200	Field Focus of Social Work Practice 1	6	2
SWRK 4120	Field Instruction 2	12	3
SWRK 4300	Field Focus of Social Work Practice 2	6	3
SWRK 2110	Emergence of the Canadian Welfare State	3	1
	or		
SWRK 2130	Comparative Social Welfare Systems	3	1
SWRK 3100	Systematic Inquiry in Social Work	3	1
SWRK 3130	Contemporary Canadian Social Welfare	3	2
SWRK 4210	Feminist Perspectives on Social Work Practice	6	2 or 3
SWRK 4220	Aboriginal People and Social Work Practice	6	2 or 3

**NOTES:**

- 1) SWRK 1310 and SWRK 2080 are open to University 1 students,
- 2) All students must take the foundation courses very early in the program. Failure to do so may restrict progression through the program.
- 3) See (Section5) for a complete list of pre-/corequisites.
- 4) Students must take SWRK 1310 before proceeding to SWRK 2110, , SWRK 2130, and SWRK 3130. In addition, SWRK 1310, SWRK 2080 and SWRK 2090 are pre- or corequisite to SWRK 3140.
- 4) All foundation courses (SWRK 1310, SWRK 2080, SWRK 2090 and SWRK 3140) are pre-requisite to SWRK 4200, SWRK 4300, SWRK 4210, SWRK 4220, SWRK 3150 and SWRK 4120. In addition, SWRK 3150 Field Instruction 1 is pre-requisite to SWRK 4120 Field Instruction 2.
- 6) See Aurora Class Schedule for a list of SWRK 4200 and SWRK 4300 courses.
- 7) Students must take one section of SWRK 4200 and one section of SWRK 4300. Each section is anchored in a different field or focus of social work practice. It is recommended that students take SWRK 4200 and SWRK 4300 courses that corresponds with their field placement area of practice.
- 8) Students must take SWRK 4200 concurrently with SWRK 3150 and SWRK 4300 concurrently with SWRK 4120. If a student withdraws from SWRK 4200, he/she must also withdraw from SWRK 3150 and if a student withdraws from SWRK 4300, he/she must also withdraw from SWRK 4120. As well, if a student withdraws from SWRK 3150 he/she must withdraw from SWRK 4200 and if a student withdraws from SWRK 4120 he/she must withdraw from SWRK 4300. Students, who fail to withdraw from the corequisite course, will be withdrawn.



- 9) Student admitted after '97-'98 *must* complete 3 credit hours of written English and 3 credit hours of mathematics as part of first 30 credit hours (unless completed prior to admission).  
10) This plan assumes that students do not take courses in the summer.

Year 1 = 21 Credit hours social work courses                      6 Credit hours electives

Year 2 = 27 Credit hours social work courses                      6 Credit hours electives

Year 3 = 24 Credit hours social work courses                      9 Credit hours electives

Planning Chart for Elective Courses for Three-Year Pro-gram

Required Electives	Credit Hours Year	
Admitted on basis of	30	1
Unallocated transfer		
Electives to be completed		
Written English (W)		1
Mathematics (M)		1

**B) Two-Year Plan (Concentrated Program) – Fort Garry Campus**

Fort Garry Campus students who have completed 51 credit hours of general university study prior to admission to the B.S.W. program, and have maintained a minimum Adjusted Grade Point Average (A.G.P.A.) of 3.00, are eligible for the two year plan (Concentrated Program). If a student has completed the 51 credit hours of general university study which are acceptable to the University of Manitoba, but does not have the required 3.00 A.G.P.A., or prefers a more extended time period, that student can register for either the three-year plan or the part-time plan.

If any of the required social work courses were part of 51 credit hours completed prior to admission to the BSW program, they will have to be substituted with elective courses after admission to the BSW program. Any outstanding elective courses, including written English and mathematics requirements, must be completed by the end of Winter term in the first year of the BSW Concentrated Program.

Students must maintain a Degree Grade Point Average (D.G.A.P.) and Subject Grade Point Average (S.G.P.A.) of a minimum 3.00 at the end of each term to remain in the Concentrated Program. In an instance where one or both of these requirements are not met, the student's status will be changed from Concentrated to Regular.

Students eligible to register for the concentrated program may choose to do so at point of initial registration following admission only.

Students planning on completing their program in two years must follow the structure outlined below (which requires completing at least 12 credit hours, including SWRK 4210 and SWRK 4220, during the summer).

**Two-Year Plan**

Year 1 (September - August)		Credit Hours
Course No.	Course Name	
SWRK 1310	Introduction to Social Welfare Policy Analysis	3
SWRK 2080	Interpersonal Communication Skills	3
SWRK 2090	Human Behaviour and Social Work Practice	6
SWRK 2110	Emergence of the Canadian Welfare State	3
	or	
SWRK 2130	Comparative Social Welfare Systems	3
SWRK 3100	Systematic Inquiry in Social Work	3
SWRK 3130	Contemporary Canadian Social Welfare	3
SWRK 3140	Introduction to Social Work Practice	3
SWRK 4210	Feminist Perspectives on Social Work Practice	6



SWRK 4220 Aboriginal People and Social Work Practice <b>Year 2 (September - May)</b>	6
SWRK 3150 Field Instruction 1	12
SWRK 4200 Field Focus of Social Work Practice 1	6
SWRK 4120 Field Instruction 2	12
SWRK 4300 Field Focus of Social Work Practice 2	6
Total credit hours	72

**Note:** See (Section 5) for a complete list of pre/co requisites.

#### C) The Part-Time Plan

Please note that it is possible to pursue the Bachelor of Social Work degree through a program of part-time study. Part-time students must complete all the required social work and elective courses within nine years of their admission to the faculty.

#### 4.2 Field Instruction

Students are expected to register for two courses in field, SWRK 3150 and SWRK 4120. Courses are taken when students have completed the prerequisites and are in the appropriate year of their degree plan. Field courses each have a corequisite, which is SWRK 4200 Field Focus of Social Work Practice 1 for SWRK 3150 Field Instruction 1 and SWRK 4300 Field Focus of Social Work Practice 2 for SWRK 4120 Field Instruction 2. The Field Focus course selected should correspond with the field placement area of practice. Students wishing to divert from their degree plan should consult with the Coordinator of Student Services and Admissions/Advising Office before February 1. Forms requesting confirmation of student plans to take field instruction in the following year will be distributed in the winter term. Students must request a field placement by completing a field section form at least 75 calendar days prior to the term that they will commence field. Students requesting a summer field placement must request the field placement at least 40 calendar days prior to summer field start. Students who do not meet the deadline cannot be guaranteed a field placement in that term.

Field Instruction in both SWRK 3150 and SWRK 4120 consists of participation in the field placement two days per week, both terms (16 hours per week). Field Instruction in the concentrated program constitutes four days per week (32 hours) in both terms at one placement. Students contemplating switching to a concentrated field placement are required to make themselves aware of eligibility requirements for this program and contact the Coordinator of Student Services and Admissions/Advising Office for confirmation of their eligibility no later than February 1. Only when this is resolved are they eligible to select this field option.

The Field Instruction program will provide the student with opportunities to learn first hand how to provide professional practice in a variety of social service agencies. The program provides an educationally focused experience in delivering progressively more demanding and complex professional social work interventions.

Field Instruction will be provided by university-appointed field instructors who may be agency-based or university-based, and who have knowledge, skills, and expertise in generic principles that can be applied to a wide range of fields of practice. The method of instruction will include individual and may include group seminars designed to assist the student to integrate theory with practice. This instruction is provided on a weekly basis. Field liaisons are available for student support, if necessary.

Active participation by the student is expected in all phases of Field Instruction including orientation conducted in their individual agency placements at the beginning of the academic year. Students absent due to illness or other reasons must contact the Field Instructor or Field Coordinator.

Students may be placed in a variety of agencies or departments. These include: school, probation, child and family services, health and mental health settings, occupational social work, those with a disability focus, and ethnically specific services. These settings provide experience in using a variety of intervention skills with individuals, families, groups, communities and policy initiatives. Every effort will be made to place students registering in SWRK 4120 (the final year of their field program) in a setting related to their field of interest. Final authority for field placement location, however, rests with the Field Coordinator. Decisions may be based on availability of agency openings, as well as on the educational needs of students. Students are expected to assume responsibility for any transportation expenses required for travel to and from the agency sites in which they are taking their Field Instruction course.

The Field Coordinator is the Instructor of Record for SWRK 3150 and SWRK 4120. While the Faculty is responsible for assisting in securing a reasonable placement for the student, it is important to note that a student is not guaranteed confirmation in a field placement setting on the sole basis of the completion of prerequisite courses. Students must demonstrate readiness for practice in the process of securing a placement. If concerns are raised regarding the student's behaviour, judgment or practice and/or if the student demonstrates difficulty in his or her attempts to attain confirmation as a result of his or her performance in the field interview process, the Field Coordinator and Associate Dean of Undergraduate Programs will determine what additional steps may be taken to resolve this matter, or may determine



the student is unprepared for meeting the requirements of field placement at this time.

All students registered in Field Instruction courses (SWRK 3150 and SWRK 4120) are required to attend Field Orientation on Tuesday, September 4, 2012 and Wednesday, September 5, 2012. As attendance at Field Orientation is mandatory, Field students are not required to attend classes on the 4th and 5th. Information regarding Field Orientation is mailed to each Field student in his or her confirmation of placement letter. If more information is required, contact the Field Coordinator at (204) 474-8300.

Students are allowed one voluntary withdrawal from the course SWRK 3150 Field Instruction 1 and one voluntary withdrawal from the course SWRK 4120 Field Instruction 2. If a student withdraws from SWRK 3150 he/she must withdraw from SWRK 4200 and if a student withdraws from SWRK 4120 he/she must withdraw from SWRK 4300. Students who fail to withdraw from the corequisite course(s), will be withdrawn.

In accordance with the *Statement of Student and Faculty Obligations*, the student is responsible for the following:

- The successful completion of prerequisite courses to field placement;
- The review of field-related written materials and participation in sessions to assist in preparation for the field placement application and referral process;
- The submission of a complete application form (including résumé) in request of field placement by the specified due date;
- Professional conduct during the interview process;
- Prompt follow-up with field placement site and/or field program staff as required in the period preceding confirmation of field placement;
- The completion of all site-specific field requirements (such as the Child Abuse Registry, Criminal Record Check, Driver's Licence, Driver's Abstract and the WRHA Immunization policy) prior to the commencement of field placement; and
- Registration in Field Instruction 1 and/or Field Instruction 2 in addition to the Field Focus of Social Work Practice corequisite course(s) prior to the commencement of field placement.

The Faculty of Social Work is responsible for providing students with the following:

- Curriculum expectations including learning objectives;
- Field Information Resource Booklet;
- Field Student Manual;
- Field Program Staff contact information and consultation;
- Materials regarding preparation for and orientation to field placement; and
- Requirements of field application, referral and confirmation process.

The Field Coordinator is the Instructor of Record for Field Instruction 1 (SWRK 3150) and Field Instruction 2 (SWRK 4120). While the Faculty is responsible for assisting in securing a reasonable placement for the student, it is important to note that a student is not guaranteed confirmation in a field placement setting on the sole basis of the completion of prerequisite courses. Students must demonstrate readiness for practice in the process of securing a placement. If concerns are raised regarding the student's behaviour, judgment or practice and/or if the student demonstrates difficulty in his or her attempts to attain confirmation as a result of his or her performance in the field interview process, the Field Coordinator and Associate Dean of Undergraduate Programs will determine what additional steps may be taken to resolve this matter, or may determine the student is unprepared for meeting the requirements of field placement at this time.

### 4.3 Requirements for Graduation

Eligibility for graduation is contingent upon:

The successful completion of 72 credit hours of required Social Work courses; successful completion means attaining a minimum grade of "C" in all Social Work courses and a minimum Subject Grade Point Average (S.G.P.A.) of 2.50 (C+).

The successful completion of 51 credit hours of electives. Students admitted after 1997/98, are required to successfully complete three credit hours of written English and three credit hours of Mathematics. The passing grades for electives taken in other faculties or schools are those required by the faculties or schools concerned. A minimum of "C" must be attained in Social Work electives. The minimum Degree Grade Point Average (D.G.P.A.) required for graduation is also 2.50 (C+).

Total credit hours required for a B.S.W. are 123 (51 credit hours of electives + 72 credit hours of required Social Work courses).

### Student Responsibilities

It is the student's responsibility to be familiar with all the requirements of the B.S.W. degree, to ensure compliance with degree program requirements, including prerequisite requirements, and to understand all relevant regulations, policies and practices. The final completion of degree requirements is the student's responsibility.

### 4.2 Field Instruction

Students are expected to register for two courses in field, SWRK 3150 and SWRK 4120. Courses are taken when students have completed the prerequisites and are in the appropriate year of their degree plan. Field courses each have a corequisite, which is SWRK 4200 Field Focus of Social Work Practice 1 for SWRK 3150 Field Instruction 1 and SWRK 4300 Field Focus of Social Work Practice 2 for SWRK 4120 Field Instruction 2. The Field Focus course selected should correspond with the field placement area of



practice. Students wishing to divert from their degree plan should consult with the Coordinator of Student Services and Admissions/Advising Office before February 1. Forms requesting confirmation of student plans to take field instruction in the following year will be distributed in the winter term. Students must request a field placement by completing a field section form at least 75 calendar days prior to the term that they will commence field. Students requesting a summer field placement must request the field placement at least 40 calendar days prior to summer field start. Students who do not meet the deadline cannot be guaranteed a field placement in that term.

Field Instruction in both SWRK 3150 and SWRK 4120 consists of participation in the field placement two days per week, both terms (16 hours per week). Field Instruction in the concentrated program constitutes four days per week (32 hours) in both terms at one placement. Students contemplating switching to a concentrated field placement are required to make themselves aware of eligibility requirements for this program and contact the Coordinator of Student Services and Admissions/Advising Office for confirmation of their eligibility no later than February 1. Only when this is resolved are they eligible to select this field option.

The Field Instruction program will provide the student with opportunities to learn first hand how to provide professional practice in a variety of social service agencies. The program provides an educationally focused experience in delivering progressively more demanding and complex professional social work interventions.

Field Instruction will be provided by university-appointed field instructors who may be agency-based or university-based, and who have knowledge, skills, and expertise in generic principles that can be applied to a wide range of fields of practice. The method of instruction will include individual and may include group seminars designed to assist the student to integrate theory with practice. This instruction is provided on a weekly basis. Field liaisons are available for student support, if necessary.

Active participation by the student is expected in all phases of Field Instruction including orientation conducted in their individual agency placements at the beginning of the academic year. Students absent due to illness or other reasons must contact the Field Instructor or Field Coordinator.

Students may be placed in a variety of agencies or departments. These include: school, probation, child and family services, health and mental health settings, occupational social work, those with a disability focus, and ethnically specific services. These settings provide experience in using a variety of intervention skills with individuals, families, groups, communities and policy initiatives. Every effort will be made to place students registering in SWRK 4120 (the final year of their field program) in a setting related to their field of interest. Final authority for field placement location, however, rests with the Field Coordinator. Decisions may be based on availability of agency openings, as well as on the educational needs of students. Students are expected to assume responsibility for

any transportation expenses required for travel to and from the agency sites in which they are taking their Field Instruction course.

The Field Coordinator is the Instructor of Record for SWRK 3150 and SWRK 4120. While the Faculty is responsible for assisting in securing a reasonable placement for the student, it is important to note that a student is not guaranteed confirmation in a field placement setting on the sole basis of the completion of prerequisite courses. Students must demonstrate readiness for practice in the process of securing a placement. If concerns are raised regarding the student's behaviour, judgment or practice and/or if the student demonstrates difficulty in his or her attempts to attain confirmation as a result of his or her performance in the field interview process, the Field Coordinator and Associate Dean of Undergraduate Programs will determine what additional steps may be taken to resolve this matter, or may determine the student is unprepared for meeting the requirements of field placement at this time.

All students registered in Field Instruction courses (SWRK 3150 and SWRK 4120) are required to attend Field orientation on Tuesday, September 6, 2011 and Wednesday, September 7, 2011. As attendance at Field orientation is mandatory, Field students are not required to attend classes on the 6th and 7th. Information regarding Field orientation will be mailed to each Field student in late August. If more information is required, contact the Field Coordinator at (204) 474-8300.

Students are allowed one voluntary withdrawal from the course SWRK 3150 Field Instruction 1 and one voluntary withdrawal from the course SWRK 4120 Field Instruction 2. If a student withdraws from SWRK 3150 he/she must withdraw from SWRK 4200 and if a student withdraws from SWRK 4120 he/she must withdraw from SWRK 4300. Students who fail to withdraw from the corequisite course(s), will be withdrawn.

#### **Accelerated Field – Inner City Social Work Program and Distance Delivery Program**

Accelerated Field allows eligible students to undertake Field Instruction I (SWRK 3150) and Field Instruction 2 (SWRK 4120) in one field placement between September and April. Field Instruction includes four days of placement per week for a total of 840 hours. Students who are approved to take Accelerated Field must also register for two corequisite Field/Focus of Social Work Practice (SWRK 4200 and SWRK 4300) courses.

Inner City Social Work Program students and Distance Delivery Program students who have completed 75 credit hours including the four foundation courses (SWRK 1310, SWRK 2080, SWRK 2090 and SWRK 3140) and have maintained a minimum Degree Grade Point Average (D.G.P.A.) of 3.0 and Subject Grade Point Average (S.G.P.A.) of 3.0 are eligible to apply for Accelerated Field. Inner City Social Work Program students in request of Accelerated Field must attach to their Field Placement Request Form, a written request to the Director of Inner City Social Work Program indicating an interest in an Accelerated Field Placement. Distance Delivery Program students in



request of Accelerated Field must attach to their Field Placement Request Form, a written request to the Coordinator of Distance Delivery Program indicating an interest in an Accelerated Field Placement. Requests must be handed in on time and are due at least 75 calendar days prior to the term that the student will commence.

#### 4.3 Requirements for Graduation,

Eligibility for graduation is contingent upon:

The successful completion of 72 credit hours of required Social Work courses; successful completion means attaining a minimum grade of "C" in all Social Work courses and a minimum Subject Grade Point Average (S.G.P.A.) of 2.50 (C+).

The successful completion of 51 credit hours of electives. Students admitted after 1997/98, are required to successfully complete three credit hours of written English and three credit hours of Mathematics. The passing grades for electives taken in other faculties or schools are those required by the faculties or schools concerned. A minimum of "C" must be attained in Social Work electives. The minimum Degree Grade Point Average (D.G.P.A.) required for graduation is also 2.50 (C+).

Total credit hours required for a B.S.W. are 123 (51 credit hours of electives + 72 credit hours of required Social Work courses).

#### Student Responsibilities

It is the student's responsibility to be familiar with all the requirements of the B.S.W. degree, to ensure compliance with degree program requirements, including prerequisite requirements, and to understand all relevant regulations, policies and practices. The final completion of degree requirements is the student's responsibility.

### SECTION 5: -1000 Level

**SWRK 1310** Introduction to Social Welfare Policy Analysis Cr.Hrs.3

(Formerly 047.131) Examination of social welfare policy as the end product of ideologies. Introduction of elements of ideology and the comparison of competing ideological systems. The relationship of economic, political and ethical views of society and their manifestations in societal responses to human need and social services. Students may not hold credit for both SWRK 1310 (or 047.131) and the former 047.130.

### SECTION 5: -2000 Level

**SWRK 2050** Community and Organizational Theory Cr.Hrs.3

(Formerly 047.205) Deals with concepts such as conflict and power which relate social work practice to the nature of secondary human relationships. These are applied to the dynamics within and between communities and organizations.

**SWRK 2070** Small Group Dynamics Cr.Hrs.3

(Formerly 047.207) Group norms, values, and goal as they relate to decision-making and communication patterns in groups. Membership roles and leadership styles are related to group development and group functioning.

**SWRK 2080** Interpersonal Communication Skills Cr.Hrs.3 (Formerly 047.208) A basic core of interpersonal skills for communicating effectively and for establishing and maintaining relationships in one-to-one and group situations. Emphasis is on experiential learning using a variety of techniques.

**SWRK 2090** Human Behaviour and Social Work Practice Cr.Hrs.6

(Formerly 047.209) Students are introduced to a broad range of theories and will develop an understanding of how people and environments reciprocally affect each other. Particular emphasis is placed on understanding how gender, race, ethnicity, socioeconomic factors, age, ability, and sexual orientation contribute to and influence human behaviour throughout the lifespan.

**SWRK 2110** Emergence of the Canadian Social Welfare State Cr.Hrs.3

(Formerly 047.211) An examination of the emergence of the Canadian welfare state from its various colonial inheritances to the Canada Assistance Plan. Social, political, economic, religious, geographical, demographic and cataclysmic factors influencing the development of the welfare state are examined and analyzed. Prerequisite: SWRK 1310 (or 047.131). Students may not hold credit for both SWRK 2110 (or 047.211) and the former 047.130.

**SWRK 2130** Comparative Social Welfare Systems Cr.Hrs.3

(Formerly 047.213) The welfare systems of three modern societies are examined and compared. Economic, political, social, religious, geographical, demographic and cataclysmic factors influencing the development of the various models of social provision are analyzed for their significance to the Canadian welfare system. Prerequisite: SWRK 1310 (or 047.131). Students may not hold credit for both SWRK 2130 (or 047.213) and the former 047.130.

**SWRK 2650** The Social Aspects of Aging Cr.Hrs.3

(Formerly 047.265) An examination of the social aspects of aging. Emphasis on understanding the aging process as a life transition involving adaptation through interaction with social and physical environments. Students may not hold credit for REC 2650 (or 123.265) and IDES 2650 (or 051.265) or HMEC 2650 (or 028.265) or SWRK 2650 (or 047.265). (A required Option in Aging course)

### SECTION 5: -3000 Level

**SWRK 3100** Systematic Inquiry in Social Work Cr.Hrs.3

(Formerly 047.310) Relates systematic methods of scientific inquiry to social work practice; theory building for practice; information collection; descriptive data for decision-making, understanding technical research material, introduction to issues of research design.

**SWRK 3130** Contemporary Canadian Social Welfare Cr.Hrs.3

(Formerly 047.313) An examination of social welfare in Canadian society, leading to an evaluation of present approaches in the light of changing economic and social conditions and changing needs. Prerequisite: SWRK 1310 (or 047.131). Students may not hold credit for both SWRK 3130 (or 047.313) and the former 047.301.



**SWRK 3140** Introduction to Social Work Practice Cr.Hrs.3 (Formerly 047.314) Introduces students to ecological and other generalist based practice frameworks and the role of professional social workers. Course emphasizes values and knowledge in context of a rational approach to problem solving which includes problem definition, assessment, contracting, intervention and evaluation. Pre- or corequisite SWRK 1310 (or 047.131), SWRK 2080 (or 047.208) and SWRK 2090 (or 047.209).

**SWRK 3150** Field Instruction 1 Cr.Hrs.12 (Formerly 047.315) A first educationally directed field experience in which the student will have the opportunity to assume responsibility for social work engagement, assessment, planning, intervention and evaluation, integrating theory from class. While Access Programs may require additional field hours, 420 hours is the minimum required for all BSW students. This time commitment includes involvement with the agency in planning for, and engaging in, practice activity, and evaluation of performance. It also includes educational contact time with the field instructor in individual and/or group sessions. Subject to satisfactory completion and reports, students will be graded on a pass/fail basis. Prerequisites: SWRK 1310 (or 047.131), SWRK 2080 (or 047.208), SWRK 2090 (or 047.209), and SWRK 3140 (or 047.314), and consent by course instructor (Field Coordinator). Corequisite: 6 credit hours of SWRK 4200 (or 047.420).

## SECTION 5: -4000 Level

**SWRK 4050** Selected Topics in Social Work Cr.Hrs.3 (Formerly 047.405) Directed readings or concentrated study in some aspect of social service which is of interest to the student. Students must contract with an instructor prior to registration. Prerequisite: written consent of instructor.

**SWRK 4070** Social Problem and Social Work Practice Seminar Cr.Hrs.3 (Formerly 047.407) In-depth study of the problem area, exploration of the ways other disciplines relate to the problem, and strengthening of interventive abilities of the student. Prerequisite: SWRK 3040 (or 047.304) / SWRK 3120 (or 047.312), SWRK 4200 (or 047.420) / SWRK 3150 (or 047.315) or written consent of instructor.

**SWRK 4080** Current Issues in Social Welfare Cr.Hrs.3 (Formerly 047.408) Study of a particular area of social welfare to improve policies and practices. Students may select one seminar from several which are offered. These may vary from year to year.

**SWRK 4120** Field Instruction 2 Cr.Hrs.12 (Formerly 047.412) A second educationally directed practice experience building on SWRK 3150 (or 047.315) in which the student will have the opportunity to carry a sustained professional role in situations which require the integration of values, knowledge, and skill at the level of a beginning professional practitioner. While Access Programs may require additional field hours, 420 hours is the minimum required for all BSW students. This time commitment includes involvement with the agency in planning for, and engaging in, practice activity, and evaluation of performance. It also includes educational contact time with the field instructor in individual and/or group sessions. Subject to satisfactory completion and reports, students will be graded

on a pass/fail basis. Prerequisites: 6 credit hours of SWRK 4200 (or 047.420), and SWRK 3150 (or 047.315), and consent by course instructor (Field Coordinator). Corequisite: 6 credit hours. of SWRK 4300.

**SWRK 4130** Advanced Interpersonal Communication Skills Cr.Hrs.3 (Formerly 047.413) An experiential course for self-understanding and self-awareness to produce a disciplined and conscious use of self in professional communication and relationships. Prerequisites: SWRK 2080 (or 047.208) and written consent of instructor.

**SWRK 4200** Field Focus of Social Work Practice Cr.Hrs.6 (Formerly 047.420) A seminar for the critical examination of social work theory, values, policy and skills in the context of a field or focus of practice. The course integrates policy with practice at micro, meso and macro levels. Course seminar topics may vary from year to year and are organized to cover various fields or focus of practice. Prerequisite: SWRK 1310 (or 047.131), SWRK 2080 (or 047.208), SWRK 2090 (or 047.209), and SWRK 3140 (or 047.314). Prerequisites: SWRK 1310 (or 047.131), SWRK 2080 (or 047.208), SWRK 2090 (or 047.209), and SWRK 3140 (or 047.314). Corerequisite: SWRK 3150 (047.315). Students cannot hold credit for both swrk 4150 (or 047.415) and SWRK 4200 (or 047.420).

**SWRK 4210** Feminist Perspectives on Social Work Practice and Social Welfare Policy Cr.Hrs.6 (Formerly 047.421) An analysis of social work practice and welfare policy from a feminist perspective. Course emphasizes the integration of social work intervention with policy in the social welfare context and overlays concepts such as empowerment, ecological practice, oppression, and practice in context of cultural diversity. Prerequisites: SWRK 1310 (or 047.131), SWRK 2080 (or 047.208), SWRK 2090 (or 047.209), and SWRK 3140 (or 047.314). Students may not hold credit for both SWRK 4210 (or 047.421) and SWRK 4170 (or 047.417) or SWRK 4210 (or 047.421) and SWRK 4190 (or 047.419).

**SWRK 4220** Aboriginal People and Social Work Practice Cr.Hrs.6 (Formerly 047.422) An analysis of social work practice and welfare policy from an aboriginal perspective. The course emphasizes the linkage between practice and policy and overlays concepts such as colonization, decolonization, and approaches to practices which include cross culture, structure, and anti-oppression in the context of Aboriginal world views, experience and helping practices. Prerequisites: SWRK 1310 (or 047.131), SWRK 2080 (or 047.208), SWRK 2090 (or 047.209), and SWRK 3140 (or 047.314). Students may not hold credit for both SWRK 4220 (or 047.422) and SWRK 4160 (or 047.416) or SWRK 4220 (or 047.422) and SWRK 4180 (or 047.418).

**SWRK 4250** Family Group Conferences Cr.Hrs.3 This course provides an overview of the research, theory and application of Family Group Conferencing within the context of child and family services and the implications for intervention. Emphasis is on experiential learning of Family Group Conferencing process and techniques.

**SWRK 4260** Addiction and CFS Practice Cr.Hrs.3 The focus of this course is to increase the student's knowledge about addictions as well as to develop student's



skills for intervention with families affected by addiction within the context of child and family services. Emphasis is on experiential learning of knowledge, process and techniques.

**SWRK 4270** Crisis Intervention Cr.Hrs.3

This course provides an overview of the research, theory and application of crisis intervention, methods and techniques within the context of child and family services. Emphasis will be on expanding existing knowledge through experiential learning of crisis intervention processes and techniques.

**SWRK 4300** Field Focus of Social Work Practice 2 Cr.Hrs.6

A seminar for the critical examination of social work theory, values, policy and skills in the context of a field or focus of practice. The course integrates policy with practice at micro, meso and macro levels. Course seminar topics may vary from year to year and are organized to cover various fields or focus of practice. For students admitted after 1993-1994. Prerequisite: SWRK 4200 (Or 047.420), SWRK 3150 (or 047.315). Corerequisite: SWRK 4120.



## Graduate Studies

### Admissions

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### Grad Admissions Chapter Contents,

#### SECTION 1: Preface

#### SECTION 2: Admission

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#### SECTION 1: Preface (Grad Admissions),

At the University of Manitoba, graduate study and research were conducted on a modest scale from the foundation of the university and during its early years. In 1949, a Faculty of Graduate Studies and Research was established to systematize efforts in these fields. Currently more than 3,300 graduate students are registered at the university. A substantial number of graduate students received fellowships, scholarships, or assistantships made available under such arrangements as the Natural Sciences and Engineering Research Council, and the university itself. Providing additional opportunity for graduate students, research work funded through grants from business corporations and government bodies is now conducted at the university.

Agriculture Canada and the Department of Fisheries and Oceans maintain major research establishments on the Fort Garry campus. Additional and extensive research facilities are available in the faculties of Dentistry and Medicine located in central Winnipeg and the university's Bannatyne Campus. The Faculty of Medicine operates in close conjunction with the major teaching hospitals.

Graduate work at the doctoral level is offered in the faculties of Agricultural and Food Sciences, Arts, Clayton H. Ridell Faculty of Environment, Earth and Resources, Dentistry, Education, Engineering, Human Ecology, Medicine, Science, Social Work, and the Asper School of Business/Faculty of Management.

The Faculty of Graduate Studies is governed by the Faculty Council of Graduate Studies. The Faculty Council delegates powers to the Executive Committee of Graduate Studies which in turn delegates responsibilities to standing committees of the faculty, such as the Guidelines and Policy Committee and the Awards Committee.

### SECTION 2: Admission to Graduate Studies,

#### 2.1 Degrees and Diplomas Offered

The Faculty of Graduate Studies offers advanced courses of instruction and facilities for research leading to the following:

Master of Architecture (M.Arch.)

Master of Arts (M.A.)

Maîtrise ès Arts (Université de Saint-Boniface)

Master of Business Administration (M.B.A.)

Master of City Planning (M.C.P.)

Master of Dentistry (M.Dent.)

Master of Education (M.Ed.)

Maîtrise en Éducation (Université de Saint-Boniface)

Master of Engineering (M.Eng.)

Master of Environment (M.Env.)

Master of Fine Arts (M.F.A.)

Master of Interior Design (M.I.D.)

Master of Landscape Architecture (M.Land.Arch.)

Master of Laws (LL.M.)

Master of Mathematical, Computational and Statistical Sciences (M.M.C.S.S.)

Master of Music (M.Mus)



Master of Natural Resources Management (M.N.R.M.)

Master of Nursing (M.N.)

Master of Occupational Therapy (M.O.T.)

Master of Physical Therapy (M.P.T.)

Master of Physician Assistant Studies (M.P.A.S.)

Master of Public Administration (M.P.A.)

Master of Public Health (M.P.H.)

Master of Science (M.Sc.)

Master of Social Work (M.S.W.)

Doctor of Philosophy (Ph.D.)

Diploma in Population Health (Dip.P.H.)

See the Graduate Studies Program index in this *Calendar* for listings of graduate programs by unit.

## 2.2 Admission

### General Policy on Admission

The general policy on admission to the Faculty of Graduate Studies is found in the Academic Guide section of this *Calendar*. Note that admission standards as well as criteria and procedures for admission may vary from program to program. Consult the specific departmental listing in this *Calendar* for details.

Admission to the Faculty of Graduate Studies is competitive and a combination of factors is considered in the admission decision, including:

- The past academic performance of the applicant and assessments of referees. These are used as indicators of the likelihood that the applicant can successfully complete the course of studies and research for the degree.
- The capacity of the department (unit, faculty, institute, etc.) to provide the program of study and research requested by the applicant, including adequate study and research facilities.

The availability and willingness of a faculty member competent to supervise the program of study and research of the applicant.

### Application Forms

Applications can be made online at [umanitoba.ca/graduate\\_studies/](http://umanitoba.ca/graduate_studies/). Paper application forms are available from the Faculty of Graduate Studies general office and from all departments. For application deadline dates, refer to the specific graduate program in this *Calendar*. Application to live in residence is made separately (See Housing and Student Life in the Student Affairs chapter.)

## 2.3 Application

### Departmental Deadlines

Please refer to the Department to which you wish to apply in the Graduate Programs Section of this *Calendar*.

### Application Fee

This fee must accompany all admission applications:

Canadian/permanent residents - \$100. (CAD)

International applicants - \$100. (CAD)

### Application Declaration

All persons seeking admission to the University of Manitoba must sign the following declaration on the Application for Admission Form: "I hereby certify that I have read and understood the instructions and information sheet attached to this application form and that all statements made in conjunction with this application are true and complete. I understand that my application will be rejected if I have not disclosed my complete academic record or have submitted false information in support of my application to the Faculty of Graduate studies. In such an event I understand that future applications from me will not be considered."

### Application Fraud or Misconduct

It should be noted that the commission of application fraud or misconduct may result in acceptance and registration being withdrawn and the applicant disqualified from consideration, not only in the year of application, but, in all subsequent sessions. If discovered in a subsequent session it may result in dismissal from the university. Application fraud or misconduct includes the following:

- Failure to declare attendance at another post-secondary institution;
- Presenting falsified academic documentation or causing or encouraging another person to falsify records through translation or data changes;
- Presenting falsified personal documentation, e.g. using a false name, date of birth, country of origin, etc.;
- Presenting falsified or fictitious reference documentation;



- Cheating on or having another person write a standardized entry exam such as TOEFL, MCAT, LSAT, DAT or GMAT;
- Presenting another person's standardized test score as one's own to falsify a test result; and
- Failure to report suspensions from another post-secondary institution.

## 2.4 Classification of Students

The classification of a student at the University of Manitoba is determined on admission to a program of study.

Please refer to Section 1.4 of the Academic Guide in this *Calendar* for Student Status/Classification of Students.

## Academic Guide

### Chapter Contents

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The Faculty of Graduate Studies academic guide contains all the rules and policies pertaining to the Faculty of Graduate Studies. Adherence to these rules is of utmost importance for the effective functioning/operation of programs and for guiding and monitoring the progress of students. The integrity of the process is at stake. The major goal of this guide is to prevent potential problems that may affect the completion of a student's program. It is the responsibility of students and the unit offering a graduate program to read and follow the policies contained herein.

All regulations as laid out in the Faculty of Graduate Studies Academic Guide are subject to revision by the appropriate bodies of the Faculty of Graduate Studies. This compendium is presented as the most recent set of regulations as a guideline for students and staff. Regulations may vary from one department or program to another. Individual departments may have additional regulations that supplement these general regulations. All such supplementary procedures and regulations must be approved as specified by the By-Laws of the Faculty of Graduate Studies, be published and available to students, and kept on file in the Faculty of Graduate Studies Office.

For those programs that are administered through a Faculty (as opposed to a Department) the term "Department" should be substituted by "Unit" within this document ( i.e. Department Head becomes Unit Head.)

## SECTION 1: Application, Admission, and Registration Policies

### 1.1 Application and Admission Procedures,

The application (and all required documentation) is to be submitted directly to the Faculty of Graduate Studies. **Applicants should contact the department to which they are applying for the procedures, requirements and departmental application deadlines in effect.**

#### Steps:

1. A completed official application for admission form must be submitted, together with the application fee and supporting documentation, to the Faculty of Graduate Studies. Until such time as an application is complete it will not be considered.

**NOTE:** International students need to pay special attention to the appropriate requirements with respect to transcripts (see application form for details).

2. Applications are subsequently reviewed by the unit offering the program who will decide whether the applicant meets the unit's criteria which include but are not limited to space, facilities, and advisors.



3. Notification of recommended/rejected applications are sent to the Faculty of Graduate Studies who check that the applicant meets the eligibility requirements of the Faculty of

Graduate Studies. The Faculty of Graduate Studies notifies applicants of their acceptance or rejection.

**Deadlines for Recommended Applications (from Departments to the Faculty of Graduate Studies)**

The following are the deadlines for receipt by the Faculty of Graduate Studies Office for recommendations from graduate departments.

Session	Start Date	Canadian/US	International
FALL	September	July 1	April 1
WINTER	January	November 1	August 1
SUMMER (May Start)	May	March 1	December 1
SUMMER (July start)	July	May 1	February 1

**IMPORTANT:** Applicants are required to submit the application and documentation to the Faculty of Graduate Studies for an earlier date than is listed above. Applicants are advised to confirm the deadline of the department to which the application is being made. Contact information for each department can be found at [http://umanitoba.ca/faculties/graduate\\_studies/admissions/index.html](http://umanitoba.ca/faculties/graduate_studies/admissions/index.html)

The deadlines are meant to accommodate the needs of students in securing appropriate documentation. Late applications may be considered for the next available start date.

**Application Fee**

obtained from the Registrar's Office, 400 University Centre (Please allow at least two weeks for delivery).

This fee must accompany all admission applications:

Canadian/Permanent Residents - \$100.00 (CDN)

International Applicants - \$100.00 (CDN)

**Proficiency in English**

A successfully completed English Language Proficiency Test from the approved list is required of all applicants unless they have received a high school diploma or university degree from Canada or one of the countries listed on the [English Language Proficiency Test Exemption List](#) (see next section). If applicable, this score is required as a basis for admission and applicants will NOT be accepted subject to receipt of an acceptable score. Documented proof of either of the above must be submitted with the application for admission. **Please note:** scores more than two years old are not acceptable.

**Transcripts:**

Applicants must arrange for official transcripts from all post-secondary institutions attended to be sent to the University of Manitoba. **Applicants must ensure that the original transcripts bearing the university seal or attested copies are sent directly from their issuing university to the Faculty of Graduate Studies.** In cases where the transcript does/will not clearly state that a degree has been conferred, an official degree certificate is required to accompany the transcript. It is important that the transcript(s) be sent so as to arrive as soon as possible to coincide with the arrival of the application.

Thresholds required for successful completion are indicated in parentheses.\*

**Transcripts: International**

University of Michigan English Language Examination Assessment Battery MELAB (80%)

Where academic records from a country other than Canada are produced in a language other than English the applicant must arrange for the submission of official literal translations of all records. To be official, original language documents and English translations must arrive together in envelopes which have been sealed and endorsed by the issuing institution.

Test of English as a Foreign Language TOEFL– Paper-based test (550); Internet based -iBT (80)

**Transcripts: University of Manitoba**

Canadian Test of English for Scholars and Teachers CanTEST (band 4.5 in listening and reading and band 4.0 in writing and oral interview)

University of Manitoba students may request student histories (unofficial academic records) to be mailed directly to the Faculty of Graduate Studies free of charge. Some departments require official transcripts which may be

International English Language Testing System IELTS (6.5)

Academic English Program for University and College Entrance AEPUC (65%)

Canadian Academic English Language Assessment (CAEL) (60 overall and 60 on each subset)

**Note:**

1. In addition, Foreign language students may be asked by the Department to complete the CanTEST prior to or following registration in the Faculty of Graduate Studies and, if need be, the Department may recommend remedial

measures in language skills based on the results of the CanTEST.

\*2. Some departments may require a specific test or test scores greater than those indicated above.

**English Language Proficiency Test Exemption List\*\***

Applicants holding secondary school diplomas and/or university degrees from the following countries are exempt from the English Language Proficiency Test requirement:

Australia	Nigeria
Belize	Puerto Rico
English Speaking West Indies	Singapore
Canada	South Africa
Guyana	United Kingdom
Ireland	U.S.A.
Kenya	Zambia
Lesotho	Zimbabwe
New Zealand	

\*\* An updated list of additional countries exempt from the English Language Proficiency Test can be found at [http://umanitoba.ca/faculties/graduate\\_studies/admissions/english\\_exemption\\_list.htm](http://umanitoba.ca/faculties/graduate_studies/admissions/english_exemption_list.htm)

**Letters of Recommendation**

Letters of Recommendation forms are available in the Faculty of Graduate Studies Office, 500 University Centre or on the web:

[http://umanitoba.ca/faculties/graduate\\_studies/media/letter\\_of\\_reference.pdf](http://umanitoba.ca/faculties/graduate_studies/media/letter_of_reference.pdf)

Two letters of recommendation must be sent to the Faculty of Graduate Studies in individually sealed envelopes with the referee's signature across the closing flap of the envelope. Applicants should check with the department to which they are applying as some departments require more than two Letters of Recommendation on a departmentally approved form.

**Admission Tests**

Some departments require admissions tests, such as the Graduate Record Examination (GRE) or the Graduate Management Aptitude Test (GMAT). These requirements are listed in the Supplementary Regulations of the particular department, and if required, the scores must be submitted at the time of application.

**Entrance Requirements**

The minimum standard for acceptance into any category in the Faculty of Graduate Studies is a 3.0 Grade Point Average (GPA) or equivalent in the last two previous years of full time university study (60 credit hours).

**Note:** This is the minimum requirement of the Faculty of Graduate Studies and departments may have higher standards and additional criteria.

**Eligibility of University of Manitoba Staff Members**

A staff member at the University above the rank of Lecturer or Instructor II is not eligible to register for a higher degree in the department in which the appointment is held.

**1.2 Registration Procedures,**

Undergraduate students are not allowed to register in graduate courses; that is, admission to the Faculty of Graduate Studies is a condition for registration in courses at the 6000 level and above.

All graduate students must initially register in the term specified in their letter of acceptance as specified in the Academic Schedule of the Graduate Calendar. Any student not registering within one term of acceptance will be required to re-apply for admission. In exceptional circumstances and with prior approval from the Department, a student may defer registration for up to one term following acceptance into the Faculty of Graduate Studies. In the case of International students, admission may be deferred, with prior approval from the Department, for up to one year following acceptance.

**All programs must be approved by the head of the major department or designate.** Approval to take courses from departments outside the major department must be obtained from the outside department.

The approval or denial of admission and registration to two programs rests solely with the faculties/units concerned. The



approval/denial must be submitted to the Faculty of Graduate Studies prior to the student's admission/registration.

Where a student does register in two programs the student must declare themselves as part-time in at least one of the programs. Students should note that completing a graduate program as a part-time student will affect their eligibility for the University of Manitoba Graduate Fellowship and may limit other funding possibilities.

### Re-Registration

Any student whose program of study extends over more than one year must re-register in fall and winter term of each succeeding year of his/her program until a degree is obtained (or in the case of Pre-Master's students their program is completed). **Failure to re-register will result in the termination of the student's graduate status.** A student who has been discontinued and would like to be considered for continuation in a program must apply for re-admission, which is not guaranteed. The re-registration requirement does not apply to Occasional students or students on an Exceptional or Parental Leave of Absence (please refer to the "Leave of Absence" section of this Guide).

**Note:** Registration is not complete until fee payment or fee payment arrangements have been made with the Comptroller in writing prior to the fee payment deadline dates. The notation 'Discontinued Graduate Program' will be placed on the academic record of any graduate student who has failed to maintain continuous registration.

### Registration Revisions

For designated periods subsequent to registration, approved revisions and transfers may be made. It is required that students adhere to dates and deadlines as published in the Academic Schedule of the Graduate Academic Calendar.

**Note:** Graduate students are not allowed to withdraw from courses without written permission from their Department head on recommendation from their advisor/advisory committee approving the program change. The notation "student discontinued program" will be placed on the academic record of any graduate student who has withdrawn from courses without such approval.

### Western Deans' Agreement

This agreement was established in 1974 as an expression of co-operation and mutual support among universities offering Graduate programs in western Canada. Its primary purpose is the reciprocal enrichment of graduate programs throughout western Canada. This agreement is not intended to preclude other agreements between participating institutions.

1. The Western Deans' Agreement provides an automatic tuition fee waiver for visiting students. Graduate students

paying normal required tuition fees to their home institution will not pay tuition fees to the host institution.

2. Students may be required to pay student, activity, application, or other ancillary fees to the host institution, according to general policies in effect at the host institution. Wherever possible, these fees will also be waived.

3. Students will qualify for the fee waiver if they:

a) present the "Authorization Form: Western Deans' Agreement" signed by the Dean or designate and the Department Head or Graduate Advisor of a participating Western institution specifying the courses to be taken for credit toward a graduate degree program at their home institution;

b) are in good standing in a graduate program at the home institution;

c) have paid all current and back fees at the home institution.

4. Students must meet all requirements as prescribed by the host university's regulations, deadlines, class capacities, and course prerequisites.

5. Registration is possible in courses at both the graduate and undergraduate levels, and in credit courses offered through distance education or other means. To be eligible, courses must be an integral part of the applicants' graduate degree program. Fee waiver is not permitted for audit or non-credit courses.

6. Students must have the Authorization Form approved by the relevant Department Head and the Faculty of Graduate Studies at the host institution at least two weeks prior to the commencement of the course(s) requested. The fee waiver is not available retroactively.

7. Students are subject to regulations of the home institution governing credit for the courses to be undertaken. As a condition of registration at the host institution, students will arrange for official transcripts from the host institution to be sent to the home institution confirming successful completion of courses selected.

8. Students must send confirmation of registration and notice of any change to the graduate Records Office of the home institution at the time of registration or course change is completed.

9. Students may not claim fee waivers under the terms of this Agreement for a period of more than 12 months total.

10. Each institution has its own regulations regarding the maximum number of transfer credits permitted in a given degree program.

Participating Universities



Athabasca University  
University of Alberta  
Brandon University  
University of British Columbia  
British Columbia Institute of Technology  
University of Calgary  
Concordia University College of Alberta  
University of Lethbridge  
University of Manitoba  
University of Northern British Columbia  
University of Regina  
Royal Roads University  
University of Saskatchewan  
Simon Fraser University  
University of Victoria  
University of Winnipeg

student's advisor, may be classified as X (Auxiliary) and the grade will not be included in the degree GPA which appears on the transcript. However, X course grades may be used in the calculation of the GPA for continuation in the program and a minimum grade requirement may be required for X coursework by the Department. (Please consult the Departmental supplemental regulations.) Additionally, X courses are used in the calculation of the GPA for the purposes of Admission and Awards. (**NOTE:** The University of Manitoba Graduate Fellowship (UMGF) and International Graduate Student Scholarship (IGSS) use X courses in the calculation of the GPA.) The student's advisor and head of the unit must determine if there is a valid need for the registration in courses under the X classification. A maximum of 12 credit hours under the X course classification is permitted while registered in a given program.

**Note:** Changes in course classifications are regarded as course/program changes and may not be made without approval (refer to the "Registration Revision" section of this Guide) or after the deadline dates for course changes as indicated in the Academic Schedule of the *Calendar*.

#### Continuing Courses (CO)

For those graduate level courses (6000, 7000, and 8000) which are being taken by students enrolled in the Faculty of Graduate Studies and which continue beyond the normal academic term, the instructor shall recommend that a mark classification of "CO" be used until such time as a final grade can be established. If the course is not completed by August 31, the student must re-register for the course(s).

Graduate Level Courses (6000, 7000, and 8000) which extend beyond the normal academic term must be denoted as such in this *Calendar*.

In the absence of an assigned mark of "CO", the student may receive a mark of "F" in that term.

#### Note:

1. A CO will normally not be permitted longer than twelve months.
2. In exceptional circumstances, where a CO grade is requested for a second twelve months, at the time the CO grade is submitted on the examination register the instructor and Department head must also submit the "Recommendation for Continuing Status of a Course" form stating the reason for the CO and the deadline by which the course must be completed.

#### Incomplete Courses

Students who are unable to complete the term work prescribed in a course may apply to the instructor prior to the end of lectures for consideration of a grade classification of "Incomplete". It is understood that the student is to write the final examination if one is scheduled for the course.

### 1.3 Course Classifications, General Classifications

Students who register through Aurora Student Information System (Aurora Student) must also have prior approval of the Department Head or designate. Students registering through Aurora Student should add only those courses that are a Major course in their program. Courses with Auxiliary "X", Audit "A", or Occasional "O" status (see below) must be added by the department.

- X Auxiliary course: Course is not a major requirement of the program but is required by the student's advisor.\*\*
- A Audit course: Course is not taken for credit. No grade is recorded.
- O Occasional course: Course is not a requirement of the program.

\*\*Extra courses which are not actually part of the Master's or Ph.D. program but which are specified and required by the



Taking into account the results of the final examination, the value of the term work completed, and the extent of the incomplete term work, the instructor shall calculate the temporary grade using a zero value for incomplete work.

Normally, the following maximum extensions are allowed:

For courses terminated in April, August 1<sup>st</sup>

For courses terminated in August, December 1<sup>st</sup>

For courses terminated in December, April 1<sup>st</sup>

If a final grade is not reported within one month of the extension deadline, the letter "I" will be dropped and the grade will remain as awarded. The student will no longer have an opportunity to improve the grade. In no case will the satisfaction of the incomplete requirements result in a lower grade being awarded.

#### 1.4 Student Status/Categories of Students, Full-Time And Part-Time Students

A student is considered to be full-time if the student is planning to carry the normal academic load of the department during the registration period. Graduate students who do not meet the criteria specified for full-time students should complete the form "Request for Part Time Status."

This form must be approved by the department head and advisor and submitted to the Faculty of Graduate Studies prior to registration.

#### Pre-Master's or Qualifying Students

In specific cases where the academic background of the student is judged to be insufficient for the given program in a unit, the department may recommend that the student be admitted to a pre-Master's program of study. The pre-Master's program is designed to bring the student's standing to approximately the level of an Honours graduate in the major department, and to provide any necessary prerequisites for courses.

#### Occasional Students

A student wishing to take graduate courses with no intention of applying those toward an advanced degree at the University of Manitoba is classed as an occasional student. Occasional students must meet the same degree and grade point average entrance requirements as regular graduate students and must write final examinations in the courses taken (unless audited), but will not receive credit toward a degree. In special circumstances, an occasional student may apply for permission to proceed to a degree program and also apply for transfer, for credit, of courses taken in the occasional category.

#### Note:

1. Transfer of courses from the "occasional category" to a degree program is not automatic: request for advance credit may be made within the first year of a degree program.

2. Fees paid by a student while registered as an occasional student are not transferable, at a later date, to a degree program.

3. Registration in the occasional student category can be for no more than one academic year without reapplication.

4. Graduate level course work must be taken while registered as an occasional student.

#### Joint Masters (With The University of Winnipeg)

The University of Manitoba and the University of Winnipeg offer four joint Master's programs in History, Religion, Public Administration, and Peace and Conflict Studies. The University of Manitoba Faculty of Graduate Studies is responsible for the administration of the joint programs and students complete the regular University of Manitoba application and registration forms. Students taking pre-Master's qualifying work for these programs register at the University where the courses are being taken.

#### Visiting Students

Visiting students are students who are registered at another institution who are taking one or more courses at the University of Manitoba on a Letter of Permission from their home university.

#### Provisional (Admission)

A new student is allowed provisional status in a program for up to one term from the time of registration. Registration for additional terms in that program will not be permitted until the provision is cleared. Provisional registration may be for such reasons as missing or incomplete documentation, lack of complete or appropriate academic background, etc.

## SECTION 2: Academic Performance –

### General

**Students are ultimately responsible for ensuring that they meet degree and program requirements.** The advisor (co-advisor), advisory committee and the department must ensure that each student follows the guidelines and meets the program requirements. The Faculty of Graduate Studies performs a final check of program requirements for each student just prior to graduation. Students are cautioned, therefore, to check all regulations with respect to the degree requirements. Failure to meet all the requirements will result in failure to graduate.



Any student re-registering in the period between receiving unsatisfactory grades and a decision by the Faculty of Graduate Studies on a deficiency does so at his/her own risk.

Departments may make recommendations with regard to the regulations concerning minimum academic performance; however, enforcement of academic regulations rests with the Faculty of Graduate Studies. The following procedures apply to recommendations made by departments:

The department is responsible for informing the Faculty of Graduate Studies when a student's performance is unsatisfactory in research or course work and the department must describe any recommended remedial action(s).

The department must notify the student of the deficiency and of their recommendation.

If the student fails to satisfy any remedial action recommended, the student will be required to withdraw from the program.

**Note:**

When a graduate student is required to withdraw from a program of study, the notation on the academic record will be: "Required to withdraw". Voluntary withdrawal from a program is not permitted once the grades have been declared and indicate that the student has failed to achieve the required minimum.

Departmental recommendations will supersede student requests for voluntary withdrawal.

A student who has been required to withdraw from a graduate program at The University of Manitoba may be permitted to enrol in another graduate program only if the application for admission is approved by the Dean of Graduate Studies or designate.

**Academic Performance**

Student progress shall be reported at least annually to the Faculty of Graduate Studies on the "Progress Report Form". Students who fail to maintain satisfactory performance may be required to withdraw on the recommendation by the Department head to the Dean of Graduate Studies.

**Performance in Course Work**

A minimum degree grade point average (GPA) of 3.0 with no grade below C+ must be maintained for continuance in the Faculty of Graduate Studies. Departments may specify, in their supplementary regulations, standards that are higher than those of the Faculty of Graduate Studies. Students who fail to maintain the specified grades will be required to withdraw unless a departmental remedial recommendation (as outlined below) is approved by the Dean of Graduate Studies.

A student may be permitted to remove deficiencies in grades by repeating the course or taking an equivalent substitute course only once for each course to a maximum of 6 credit hours of coursework. If a course is repeated or replaced, the highest grade obtained will be used in the determination of the degree grade point average.

**Note:**

In exceptional circumstances, the major department may appeal to the Faculty of Graduate Studies for approval of remedial recommendation(s) falling outside those prescribed above.

Students receiving a grade of C or less in more than 6 credit hours of coursework are required to withdraw.

In general, supplemental exams are not permitted to students in the Master's or Ph.D. program.

All actions taken administratively are to be reported, in summary form to the Faculty of Graduate Studies Executive Committee.

**SECTION 3: General Regulations – Pre-Master's Admission and Requirements**

Graduates of bachelor degree programs with a minimum grade point average (GPA) of 3.0 in the last two full years of university study will be considered for admission to a pre-Master's program. These are the minimum requirements of the Faculty of Graduate Studies. Departments may specify higher or additional criteria. **Admission to a pre-Master's program does not guarantee future admission to a Master's program.** As the pre-Master's program of study is intended to bring a student's background up to the equivalent of the required 4-year degree, departments should assign to students, as part of their pre-Master's program of study, an appropriate number of applicable upper level (3000 or 4000) undergraduate courses. In exceptional circumstances and upon prior approval by the Graduate Dean, 7000 level courses may be considered for inclusion in the pre-Master's program of study for those students who hold a 4 year degree. Courses taken as part of the pre-Master's program may not be transferred to a Master's program at a later date.

**Academic Performance**

1. The department head or designate is responsible for assigning the courses and monitoring the progress of each student.
2. A minimum degree grade point average of 3.0 with no grade below C+ must be maintained for continuance in pre-Master's study. Students who fail to maintain this standing will be required to withdraw unless a departmental remedial



recommendation (as below) is approved by the Dean of Graduate Studies.

3. Students deficient in 6 hours of credit or less may be permitted to write a supplemental examination (when offered) in courses in which a grade of C or less was obtained.

4. Students deficient in 6 hours of credit or less with a grade of C, D, or F in a course or courses may be permitted, if the overall average is C or better, to write one supplemental examination in each course (when offered), to repeat the courses, or to take equivalent substitute courses.

**Note:** In exceptional circumstances, when a student is deficient in more than 6 credit hours, the student may be permitted to repeat the pre-Master's year or to write supplemental examinations (when offered) or to substitute equivalent course work in order to make up the deficiencies.

A student may be permitted to repeat the pre-Master's year only once, and to remove deficiencies in grades by writing supplemental examination or repeating courses only once for each course to a maximum of 9 credit hours of course work.

If a course is repeated or a supplemental examination is written, the highest grade obtained in that course will be used in the determination of the degree GPA.

The degree GPA is cumulative in a pre-Master's program if more than one year is required to complete the course requirements.

All action taken administratively is to be reported in summary form to the Faculty of Graduate Studies Executive Committee.

## SECTION 4: General Regulations – Master's Diploma Programs:

The regulations for the Master's program shall also prevail for diploma programs. Students should also consult the department supplemental regulations regarding diploma programs.

Individual departments may have additional regulations that supplement these general regulations. All such supplementary procedures and regulations must be approved as specified by the By-Laws of the Faculty of Graduate Studies, be published and available to students, and kept on file in the Faculty of Graduate Studies.

### Admission

Students who are eligible to be considered for direct admission to a program of study leading to the Master's degree include:

- Graduates of four-year undergraduate degree programs (or equivalent) from
  - a. Canadian institutions empowered by law to grant degrees; or
  - b. Colleges and universities outside Canada which are officially recognized by The Faculty of Graduate Studies.
- Graduates from first-cycle Bologna compliant degrees.
- Students who have completed the pre-Master's program from the University of Manitoba or from
  - a. Canadian institutions empowered by law to grant degrees; or
  - b. Colleges and universities outside Canada which are officially recognized by The Faculty of Graduate Studies.

All students applying for a Master's degree program must have attained a minimum GPA of 3.0 in the last two full years (60 credit hours) of study. This includes those applying for direct admission and those entering from a pre-Master's program. Students who meet the minimum requirements for admission to the Faculty of Graduate Studies are not guaranteed admission.

The pre-Master's program is designed to bring the student's standing to the approximate level of an Honours graduate in the major department, and to provide the student with any necessary prerequisites for courses to be taken in the Master's program.

In specific cases where the academic background of the student is judged to be insufficient for the given program in a unit, the department may recommend that the student be admitted to a pre-Master's program of study.

### Student's Advisor/Co-Advisor

Each Master's student should have an advisor upon entry into the program, and must have one assigned no later than one term following registration. The advisor is approved by the Department Head, must be a member of the Faculty of Graduate Studies, be active in research, have expertise in a discipline related to the student's program, and hold at least a Master's degree or equivalent. Any exceptions or special circumstances must be recommended by the Head of the major department and approved by the Dean of the Faculty of Graduate Studies. It is the responsibility of the Department Head to determine whether faculty members meet these criteria, and also to report on equivalency as necessary. In special circumstances, an advisor and co-advisor upon approval of the Department Head may advise a student.\* The advisor and co-advisor must be members of the Faculty of Graduate Studies. (Refer to *Academic Membership* at [http://umanitoba.ca/faculties/graduate\\_studies/admin/131.html](http://umanitoba.ca/faculties/graduate_studies/admin/131.html).)



The advisor will advise the student on a program of study, direct research, and supervise the thesis or practicum work. In departments where the choice of thesis/practicum topic and thesis/practicum advisor are postponed for some time after a student's entry into the program, the Department Head shall appoint a faculty member to advise the student in the interim period before the regular advisor is assigned or chosen.

**\*Note:** When an advisor and co-advisor are assigned, together they shall fulfill the role of the advisor (that is, neither shall fulfill any other advisory or examining committee membership requirements). The co-advisors will usually be identified together at the beginning of a student's program. However, in some circumstances the need for a co-advisor may arise mid-way through a student's program. In all instances the Faculty of Graduate Studies must be informed of the co-assignment. One advisor must be identified as the primary advisor; however, both co-advisors' signatures are required on all documents where the advisor's signature is required.

#### Advisory Committee (Master's)

In those departments that specify that a Master's advisory committee is required, the committee must consist of at least one person who holds a primary appointment from within the major department. Additional specifications regarding the advisory committee are found in the departmental supplemental regulations.

#### Program Requirements

All students must complete one of the following programs of study for the Master's degree (unless otherwise specified in the approved departmental supplemental regulations):

##### Thesis/Practicum Route:

A minimum of 12 credit hours of course work plus a thesis or practicum. The minimum must include at least 6 credit hours at the 7000 level with the balance of the coursework at the 3000 level or above. A maximum of 24 credit hours of coursework is allowed toward the thesis/practicum based Master's program.\*

##### Comprehensive Examination Route:

A minimum of 24 credit hours of course work and comprehensive examination(s). The minimum must include at least 12 credit hours at the 7000 level or above with the balance of the coursework at the 3000 level or above, or, in exceptional circumstances, and upon approval of the Dean of the Faculty of Graduate Studies, the 2000 level. A maximum of 48 credit hours of coursework is allowed toward the comprehensive examination based Master's program.\*

\*Unless professional accreditation requirements or existing supplemental regulations indicate otherwise.

#### Notes:

The program of study is determined by the major department and may include requirements in addition to those specified above. All departmental supplemental regulations require prior approval of the Faculty of Graduate Studies.

For historical reasons, the following thesis/practicum based programs are subject to the same min/max credit hour restrictions as for the comprehensive-based Master's: Master of Nursing, Master of Architecture, Master of City Planning, Master of Landscape Architecture, Master of Natural Resource Management.

#### Language Reading Requirements

Some departments specify a language requirement for the Master's degree. Students are advised to check departmental supplemental regulations regarding this requirement.

#### Advance Credit

Advance credit for courses completed prior to admission to a Master's program will be considered on an individual basis. The student's major department makes the request to the Faculty of Graduate Studies by completion of the "Recommendation for Advance Credit (Transfer of Courses)" form.

#### Note:

Application for advance credit must be made within the first year of the program (see Lapse of Credit of Courses in this section).

No more than half of the required course work for the program can be given advance credit.

A course may not be used for credit toward more than one degree, diploma or certificate.

For thesis-/practicum-oriented programs the student must complete the thesis/practicum at The University of Manitoba.

For the comprehensive examination route, the student must complete the comprehensive examination(s) at The University of Manitoba.

Regardless of the extent of advance credit received, all students are required to pay the program fee.

#### Transfer Credit

Courses within a program of study may be taken elsewhere and transferred for credit at The University of Manitoba. Courses must be approved for transfer to the program of study by the major department and the Faculty of Graduate Studies before the student may register for them. This permission is granted in the form of a Letter of Permission, which may be obtained by making application to the Registrar's Office.



Transfer credit (courses taken at other universities while registered in a program at The University of Manitoba) is granted as follows: For Master's students, transfer credit must not exceed 50% of the minimum credit hours of coursework required for the program.

**Note:** Students seeking a Master's degree from The University of Manitoba must complete at least 50% of their required program coursework at The University of Manitoba.

#### Minimum Time Requirement

The minimum time for students in the Master's program is equivalent to two terms. Most departments require more than this.

#### Maximum Time Limits

The maximum time allowed for the completion of the Master's degree except where indicated in specific units is as follows:

**Note:** Each department may have supplementary regulations for maximum time limits.

2 years: Master of Laws

3 years: Master of Occupational Therapy (accelerated program).

4 years: Master of Physician Assistant Studies

6 years: Master of Business Administration, Master of Public Administration, Master of Education, Master of Nursing, Master of Social Work and Master of Engineering.

5 years: All other Master's degree and diplomas

Recommendations for extensions of time to complete the degree will be considered on an individual basis and must be approved by the Dean of Graduate Studies **at least four months** prior to expiration of the respective maximum time limit.

**Note:** A student who has not completed the degree requirements within the time limit or within the time limit of the extension (see also sections: "Extension of Time to Complete Program of Study" and "Leave of Absence") will be required to withdraw from the Faculty of Graduate Studies and the notation on the student record will be "Required to withdraw: time to complete program expired".

#### Lapse of Credit of Courses

Courses completed more than eight years prior to the date of awarding of a degree may not normally be used for credit toward that degree.

#### Academic Performance

Graduate Studies

Student progress shall be reported at least annually to the Faculty of Graduate Studies on the "Progress Report Form". Students who fail to maintain satisfactory performance may be required to withdraw on the recommendation by the Department Head, to the Dean of Graduate Studies.

#### Performance in Coursework

A minimum degree grade point average of 3.0 with no grade below C+ must be maintained for continuance in the Master's program. Students who fail to maintain this standing will be required to withdraw unless the Dean of Graduate Studies approves a departmental remedial recommendation (refer to the section: Academic Performance – General).

#### Performance not related to Coursework

Students are required to demonstrate satisfactory academic performance in areas not related to performance in courses, such as attendance at or participation in course lectures, seminars and in laboratories and progress in research, thesis or practicum. **The specific nature of satisfactory academic performance is outlined in the departmental Supplementary Regulations and must be reported to the Faculty of Graduate Studies on the "Progress Report Form"**. Students who fail to maintain satisfactory performance may be required to withdraw on the recommendation of the Department Head to the Dean of the Faculty of Graduate Studies.

#### Course or Program Changes

Students are not permitted to change their program of study, including withdrawal from individual courses, without the approval of their advisor and/or advisory committee and Department Head. Withdrawal from courses or changes of course category (i.e., grade mode) without such approval will result in the student being required to withdraw from the Faculty of Graduate Studies.

#### Deadlines For Graduation

The final requirements of the degree, in the form of the final report on the thesis/practicum (and the corrected copies of the thesis/practicum); comprehensive examination; or M. Eng. Project, must be submitted to the Faculty of Graduate Studies by the appropriate deadline. For those programs that do not have a culminating exercise (thesis/practicum/comprehensive examination/M. Eng. project) the unit must forward potential graduate names to the Faculty of Graduate Studies by the deadline. The deadline for each of the graduation dates is published in the Academic Schedule of the Graduate Calendar. Extensions to these deadlines will be considered in exceptional circumstances only.

#### Academic Requirement for Graduation

A cumulative degree grade point average of 3.0 or greater is required in those courses that constitute the program of study for graduation in the Faculty of Graduate Studies.



### Comprehensive Examination

The regulations governing comprehensive examinations, where required, are specified in the supplementary regulations of the major department. No student may sit for those examinations more than twice. The results of the comprehensive examinations shall be submitted to the Faculty of Graduate Studies on the appropriate form in the terms "pass" or "fail."

**Note:** Any student who receives a "fail" on the comprehensive examination twice will be required to withdraw from the Faculty of Graduate Studies.

### Thesis Proposal/Practicum Plan

Each student is required to develop a thesis proposal/practicum plan in his or her chosen field of study. Normally, the thesis is developed under the mentorship of the advisor/co-advisor. The advisor/advisory committee/Department Head/grad chair must formally approve the thesis proposal. (Each department may have specific guidelines regarding the thesis proposal). Research involving human or animal subjects requires ethical approval prior to initiation of research. Please refer to the appropriate ethics review committee.

## 4.1 Thesis and Practicum Regulations, General

Students must demonstrate their mastery of the field and that they are fully conversant with the relevant literature through their thesis.

### Practicum versus thesis:

While the practicum differs from the thesis in its emphasis on the application of theory, it is similar in scope, span, and rigor. The weight of work required for the practicum is equal to that required for the Master's thesis. In general, the practicum takes the form of an exercise in the practical application of knowledge and skill. It usually involves the careful definition of a problem, the application of appropriate knowledge and skills to the problem, and a report of the results in a manner suitable for evaluation by an examining committee. The requirements are specified by the departments concerned.

### Style and format:

The thesis/practicum must be written according to a standard style acknowledged by a particular field of study and recommended by the major department, be lucid and well written, and be reasonably free from typographical and other errors.

The electronic and paper copies of the thesis/practicum must be submitted in good, clear type. As long as the copies are clearly legible, the thesis/practicum may be reproduced by a method that is presented in the thesis guidelines which are

available on the Faculty of Graduate Studies website: [http://umanitoba.ca/faculties/graduate\\_studies/](http://umanitoba.ca/faculties/graduate_studies/). Minimum left margin is 3.8 cm (1.5 inches), other margins are 2.5 cm (1 inch). Wherever possible, these margins should be adhered to for illustrative materials. Minimum paper weight of the paper copy is 16 lb. Bond or equivalent.

### Deadlines and Details for submissions of final copies:

The Academic Schedule in the Graduate Calendar should be consulted regarding dates by which theses/practica must be submitted.

Following the approval of the thesis/practicum by the examining committee and the completion of any revisions required by that committee, the thesis, and where applicable, the practicum, must be submitted to the Faculty of Graduate Studies as follows:

One paper copy in unbound form, enclosed in an envelope or folder; and

One digital version submitted as an e-thesis at the MSpace website:

<https://mspace.lib.umanitoba.ca/index.jsp>

The e-thesis is the official copy. Students are encouraged to review the e-thesis submission requirements prior to creating a digital version. Electronic multimedia files or accompanying files that are part of an e-thesis should be posted to MSpace as separate files.

The paper copy will become a circulating copy. Where possible, the contents of the official electronic version must be replicated in the paper copy.

Both digital and paper copies of the thesis/practicum are required for the University Library and remain the property of the University of Manitoba.

## 4.2 Thesis/Practicum Examination Procedures, Examining Committee

The student's advisor will recommend a suggested thesis/practicum examining committee to the Department Head for approval, which shall then be reported to the Faculty of Graduate Studies Office on the "Master's Thesis/Practicum Title and Appointment of Examiners" form. The committee must consist of a minimum of three examiners. At least two examiners must be members of the Faculty of Graduate Studies. One examiner must hold a primary appointment from within the major department and one examiner must be external to the department. All examiners must be deemed qualified by the Department Head and willing to serve.

**Note:** The external member should be considered arm's length to the department. While the definition of "arm's length" is left to the discretion of the department, be advised



that justification may be required by the Faculty of Graduate Studies for this selection.

### Distribution and Examination

The head of the major department will arrange for the distribution of the thesis/practicum to the examiners and will notify the Faculty of Graduate Studies Office at the time that the thesis/practicum has been distributed for examination. It is the duty of all examiners to read the thesis/practicum and report on its merits according to the following categories:

Acceptable without modification or with minor revision(s)

Acceptable subject to modification and/or revision(s)

Not acceptable

#### Note:

1. The examining process should be completed within one month of distribution of the thesis/practicum.
2. A student has the right to an examination of the thesis/practicum if he/she believes it is ready for examination.

### Oral Examination

Normally, students must pass an oral examination on the subject of the thesis/practicum and matters relating thereto. The form of the oral examination will be as prescribed by the Supplementary Regulations of the major department. The oral examination shall be open to all members of The University of Manitoba community except in exceptional cases. The oral examination may be closed, for example, when the results of the thesis/practicum research must be kept confidential for a period of time. In such cases, the examining committee and Department Head shall recommend such action to the Dean of Graduate Studies who shall then approve that the final examination be closed to all but the examining committee and the Dean of Graduate Studies (or designate). It is expected that all members of the examining committee be present at the defense.

### Final Approval/Rejection

Following completion of the examination of the thesis/practicum, examiners will consider the oral examination and the written thesis/practicum to determine the nature of and procedures for approval of any revisions that will be required prior to submission to the Faculty of Graduate Studies. The advisor is normally responsible for ensuring that revisions are completed according to the instructions from the examining committee. The Faculty of Graduate Studies will accept the thesis/practicum only when the required revisions have been completed.

**Note:** A student will be required to withdraw when the Master's thesis or practicum has been rejected twice at the stage where:

- a) The examining committee reports on the merits of the written thesis;
- b) The defense; or
- c) A combination of both stages.

### Final Report

The judgement of the examiners shall be reported to the Faculty of Graduate Studies in the qualitative terms "approved" or "not approved". Such verdicts must be unanimous, and each examiner must indicate, by his/her signature, concurrence with the verdict. Anything less than unanimity shall be considered a failure. In the case of a failure for the thesis/practicum at the Master's level a detailed written report will be prepared by the Chair and submitted to the Faculty of Graduate Studies, who will make the report available to the candidate and advisor.

The candidate will be recommended for the Master's degree upon receipt by the Faculty of Graduate Studies of favorable results of the thesis or practicum examining committee and when the corrected copy of the electronic version of the thesis/practicum is submitted to MSpace and corrected copy of the paper version of the thesis/practicum is submitted to the Faculty of Graduate Studies, providing all other degree requirements have been satisfied.

### 4.3 Publication and Circulation of Thesis/ Practicum,

Every graduate student registering in a thesis/practicum Master's program at The University of Manitoba shall be advised that, as a condition of being awarded the degree, he/she will be required to grant a license of partial copyright to the University and to the Library and Archives Canada for any thesis or practicum submitted as part of their degree program.

**Note:** This license makes the thesis/practicum available for further research only. Publication for commercial purposes remains the sole right of the author.

The forms and conditions pertaining to these license agreements are available at the Faculty of Graduate Studies Office. Note that this and other related regulations may give rise to important questions of law, and students may need additional legal advice on the copyright laws of Canada and/or other countries. Students who wish to obtain legal advice concerning their subsequent rights are advised to do so prior to signing the agreements. Signing of the license agreements is normally done after the contents of the thesis/practicum have been delineated and the importance of copyright and/or patents fully comprehended.

Publication in the above manner does not preclude further publication of the thesis or practicum report or any part of it in a journal or in a book. In such cases, an



acknowledgement that the work was originally part of a thesis or practicum at The University of Manitoba should be included.

#### Notes:

**Copyright** – Copyright in theses and practica is protected in international copyright law. A copyright symbol © or (c) is incorporated on a page containing statements of permission to microfilm and to lend copies of the thesis or practicum. After completion, this page should be inserted in the thesis/practicum immediately following the title page. Blank copies of this page are available from the Faculty of Graduate Studies Office.

**Patents** – Refer to the section “Policy of Withholding Theses Pending Patent Applications” in this Guide.

**Restriction of theses or practica for publication** – In exceptional cases, not covered by the regulation concerning patents, where adequate cause can be shown to delay publication, the student may request the Dean of Graduate Studies to restrict access, for a period up to one year after submission, of the digital and unbound paper versions of a thesis or practicum submitted to The University of Manitoba. The Dean, in consultation with the student's advisor, shall determine for what period, if any, access will be so restricted.

**Library and Archives Canada** – A microfiche of the thesis is forwarded to the Library and Archives Canada and is listed in a monthly and annual national bibliography, ‘Canadiana’, which is published by the National Library.

### SECTION 5: General Regulations – Ph.D. FOR FACULTY-BASED PH.D PROGRAMS, THE DEAN OR DESIGNATE IS THE DE FACTO DEPARTMENT HEAD.

The degree of Doctor of Philosophy is granted only upon evidence of general proficiency and of distinctive attainment in a special field. In particular, a recognized ability for independent investigation must be demonstrated by the candidate in a thesis which embodies original research or creative scholarship and is presented with a high degree of literary skill. It is a research degree and is never conferred solely as a result of coursework study.

These general regulations apply to all students in all departments. Individual departments may have procedures and regulations that supplement these general regulations. All such procedures and regulations must be consistent with these general regulations, approved as specified by the By-Laws of the Faculty of Graduate Studies, published and available to students, and kept on file in the Faculty of Graduate Studies.

#### Admission

Normally, a Master's degree or equivalent from a recognized university and a cumulative GPA of 3.0 or equivalent in the last two previous years of full time university study (60 credit hours) is the minimum requirement for admission to the Ph.D. program. With special recommendation of the department concerned (please see below), applicants with an honours Bachelor's degree may be considered for entry to Ph.D. study.

#### Direct Admission from the Bachelor's Honours or equivalent

Students to be considered for admission to a Ph.D. program directly from the honours Bachelor's degree or equivalent must be outstanding in their academic background (GPA well above 3.0 in the last two full years of undergraduate study). Once admitted, these students must complete at least 24 credit hours of course work and will be assessed Ph.D. fees for 3 years.

#### Transfer from the Master's to the Ph.D. program

Students who have not completed a Master's program may transfer to the Ph.D. program within the same department upon recommendation to the Faculty of Graduate Studies by the student's major department. The recommendation must be made within 24 months of the student's commencement of the Master's program. The coursework completed in the Master's program would normally become a part of the Ph.D. program, and the number of years spent in the Master's program would be counted as years in the Ph.D. program. Students must complete at least 24 credit hours of coursework. If the transfer occurs within 12 months of the initial registration in the Master's program, the student will be assessed Ph.D. fees for 3 years. If the transfer occurs after 12 months, the student will be assessed Ph.D. program fees for 2 years (as they will have already paid fees for the Master's program). Students are cautioned that such transfers may impact on the University of Manitoba Graduate Fellowship duration. The request to transfer from the Master's to the Ph.D. program must be submitted to the Faculty of Graduate Studies at least one month prior to the term for which the student intends to commence the Ph.D. program. The following are required when making the request: The “Application for Admission” form (and application fee); “Ph.D. Selection Committee Report” form, and; in the case where the student does not hold a Master's degree, a memo from the Department Head.

**Note:** Where a student with a Master's degree or equivalent is initially admitted and registered in a Master's program, that student may be transferred to the Ph.D. program within the same department on recommendation from the student's advisor and Department Head, provided the recommendation is made at the time of admission to the Master's Program (i.e. “Possible transfer to Ph.D. Program within 12 months”) and the follow up transfer recommendation occurs within 12 months of the initial registration in the Master's program. In such a case, the application fee is waived and fees assessed towards the Master's program will be deducted from the full 2 years of Ph.D. program fees.

#### Provisional Admission to the Ph.D.



Students nearing completion of the Master's degree may be accepted provisionally to the Ph.D. program for a 12 month period (commencing with the first registration in the Ph.D. program). Further registration in the Ph.D. program is contingent upon completion of all requirements of the Master's degree within the 12 months.

**Note:** Students must maintain continuous registration in their Master's program until completion. Students will require assistance from the department or the Faculty of Graduate Studies to complete dual registration in the Master's and Ph.D. program simultaneously.

### Selection Committee

Upon receipt of an application, the head of the major department will appoint a selection committee of at least three persons to evaluate the student's qualifications and report on his/her suitability for Ph.D. study. In making admission decisions, departments may also consider such things as the availability of facilities and financial assistance. If acceptance is recommended by the selection committee and approved by the head of the department and the Dean of the Faculty of Graduate Studies, the Faculty of Graduate Studies sends a letter of acceptance to the applicant.

### Student's Advisor/Co-Advisor

Every Ph.D. student must have an advisor, appointed by the Department Head, whose duties will be to advise the student on a program and courses, direct research, and supervise thesis work. The advisor must be a member of the Faculty of Graduate Studies, be active in research, have expertise in a discipline related to the student's program and hold a Ph.D. or equivalent. In special circumstances, an advisor and co-advisor, upon approval of the Department Head may advise a student.\* The co-advisor must be a member of the Faculty of Graduate Studies. It is the responsibility of the Department Head to determine whether faculty members meet these criteria, and to report on equivalency as necessary.

The student's advisor also acts as a channel of communication to the student's advisory committee, the major department, and the Faculty of Graduate Studies. Usually the student and the advisor choose to work together by mutual agreement. In departments where the choice of thesis topic advisor are postponed for some time after entry into the program, the Department Head or the selection committee shall appoint a faculty member to advise the student as to the rules and regulations and on a program and course requirements in the interim period not to exceed eighteen months before a permanent advisor is chosen.

**\*Note:** When an advisor and co-advisor are assigned, together they shall fulfill the role of the advisor (that is, neither shall fulfill any other advisory or examining committee membership requirements). The co-advisors will usually be identified together at the beginning of a student's program. However, in some circumstances the need for a co-advisor may arise mid-way through a student's program. In all instances the Faculty of Graduate Studies must be informed of the co-assignment. One advisor must be

identified as the primary advisor; however, both co-advisors' signatures are required on all documents where the advisor's signature is required.

### Program of Study

As soon as possible but no later than 24 months after a student has commenced the program, the student's program of study, which includes information about the minimum time for completion of the degree, course work to be taken, foreign language requirement, and the research area in which the thesis will be done, should be forwarded to the Faculty of Graduate Studies. The program of study and any changes thereto must be approved by the student's advisor, and the advisory committee and the head of the major department. The approval of the student's advisor and the head of the major department are sufficient for registration.

### Advisory Committee

The Head of the major department is responsible for the establishment of an advisory committee for each Ph.D. student. The advisory committee must consist of a minimum of three members of the Faculty of Graduate Studies, one of whom must hold a primary appointment from within the major department and one of whom must hold a primary appointment outside the major department. Committees may include one guest member who has expertise in a related discipline but is not a member of the Faculty of Graduate Studies. The membership of the committee, including the advisor, as well as any changes to it, must be approved by the Dean of Graduate Studies. The advisor is the Chair of the advisory committee.

Responsibilities of the committee are to approve the program of study and thesis proposal and to exercise general supervision over the student's work throughout the Ph.D. program. The committee should meet with the student periodically (and must meet with the student at least once a year) to review the student's progress and to report this progress to the Faculty of Graduate Studies (through the Head of the major department). (In the situation where a Ph.D. Advisory Committee or responsible individual(s) would not normally be established until the candidacy exam is completed then at least one responsible individual will meet with the student.) If there is evidence of unsatisfactory performance, the student may be required to withdraw.

### Program Requirements

All students must complete one of the following programs of study for the Ph.D. degree (unless otherwise specified in the approved departmental supplemental regulations): Where admission to the Ph.D. is directly from a Master's degree, a minimum of 12 credit hours at the 7000 level or higher plus a thesis is required. Any further coursework beyond the minimum 12 credit hours at the 7000 level must be at the 3000 level or above. For those students who hold a Master's degree, a maximum of 24 credit hours of course work is allowed toward the Ph.D. program.\*

Where admission to the Ph.D. is directly from an Honours Bachelor degree or equivalent, a minimum of 24 credit hours



plus a thesis is required. The coursework must include a minimum of 18 credit hours at the 7000 level or higher with the balance of the coursework at the 3000 level or above. For those students who do not hold a Masters degree, a maximum of 48 credit hours of course work is allowed toward the Ph.D. program.\*

\*Unless professional accreditation requirements and supplemental regulations indicate otherwise.

**NOTE:** The program of study is determined by the major department and may include requirements in addition to those specified above. All departmental supplemental regulations require prior approval of the Faculty of Graduate Studies.

#### Language Reading Requirements

Some departments specify a language requirement for the Ph.D. degree. Students are advised to check departmental supplemental regulations regarding this requirement.

#### Advance Credit

Advance credit for courses completed prior to admission to a Ph.D. program will be considered on an individual basis. The student's major department makes the request to the Faculty of Graduate Studies by completion of the "Recommendation for Advance Credit (Transfer of Courses)" form.

#### Note:

1. Application for advance credit must be made within the first year of the program (see Lapse of Credit of Courses in this section).
2. No more than half of the required course work for the program can be given advance credit.
3. A course may not be used for credit toward more than one degree, diploma or certificate.
4. The student must register at The University of Manitoba for one academic year as a full-time student and must also complete the thesis at The University of Manitoba.
5. Regardless of the extent of advanced credit received, all students are required to pay the program fee.

#### Transfer Credit

Courses within a program of study may be taken elsewhere and transferred for credit at The University of Manitoba, but all such courses must be approved for transfer to the program of study by the major department and the Faculty of Graduate Studies before the student may register for them. This permission is granted in the form of a Letter of Permission which may be obtained by making application to the Registrar's Office.

Transfer credit (courses taken at other universities while registered in a program at The University of Manitoba) is to be granted as follows: For Ph.D. students transfer credit must not exceed 50% of the minimum credit hours of coursework required.

**Note:** Students seeking a Ph.D. degree from The University of Manitoba must complete at least 50% of their required program coursework at The University of Manitoba.

#### Minimum Time Limit

The minimum time requirement for the program of study for the degree will normally be two years of study beyond the level of the Master's degree, or three years beyond the level of a Bachelor's degree. The student may be permitted to spend one of these years in an approved program of research or study elsewhere. Such permission must be approved by the Dean of Graduate Studies on the recommendation of the student's advisory committee.

#### Maximum Time Limit

A student's candidature shall lapse if he/she fails to complete the degree within seven years following initial registration in the Ph.D. program. For those students who transfer from the Master's to the Ph.D., years spent in the Master's program are counted as years in the Ph.D. program. Recommendations for extensions of time to complete the degree will be considered on an individual basis and must be approved by the Dean of Graduate Studies.

**Note:** A student who has not completed the degree requirements within the time limit or within the time limit of the extension (see also sections "Extension of Time to Complete Program of Study" and "Leave of Absence") will be required to withdraw from the Faculty of Graduate Studies and the notation on the student record will be "Required to withdraw: Time to complete program expired".

#### Residence Requirement

Two residence periods at The University of Manitoba devoted to full-time graduate study, subsequent to admission into the Ph.D. program, are required of all students. (For the purposes of the Residence Requirement one residence period is Fall Term, Winter Term or Summer Term (May – August) combined.) The student shall be geographically available to visit the campus regularly during these residence periods.

**Note:** The purpose of the residency is to ensure that Ph.D. students have an opportunity to work within the stimulating environment provided by contact with a cohort of dedicated peers and professors in a chosen field of study, and also to enhance the breadth and depth of their graduate experience by being part of a broader university culture.

**Note:** Students may not retain the status of full-time while employed full-time without prior permission of the Dean of



the Faculty of Graduate Studies and recommendation from the major department.

### Lapse of Credit of Courses

Courses completed more than eight years prior to the date of awarding of a degree may not normally be used for credit toward that degree.

### Academic Performance

Student progress shall be reported at least annually to the Faculty of Graduate Studies on the "Progress Report Form". Students who fail to maintain satisfactory performance may be required to withdraw on the recommendation by the Department Head, upon receiving input from the advisory committee, to the Dean of Graduate Studies.

### Performance in course-work

A minimum degree grade point average of 3.0 with no grade below C+ must be maintained for continuance in the Ph.D. program. Students who fail to maintain this standing will be required to withdraw unless the Dean of Graduate Studies approves a departmental remedial recommendation (refer to the section: Academic Performance – General).

### Performance not related to course work

Students may also be required to withdraw from their Ph.D. program for reasons of unsatisfactory performance other than those related to failing grades. These include, but are not restricted to, such things as unsatisfactory attendance and lack of progress in research and/or thesis. The student's advisory committee will make a recommendation for required withdrawal to the Department Head. The Department Head will then recommend to the Dean of the Faculty of Graduate Studies that the student be required to withdraw for reasons of unsatisfactory academic performance.

### Course or Program Changes

Students are not permitted to change their program of study, including withdrawal from individual courses, without the approval of their advisor and/or advisory committee and Department Head. Withdrawal from courses or changes of course category without such approval will result in the student being required to withdraw from the Faculty of Graduate Studies.

### Deadlines for Graduation

The final requirements of the degree, in the form of the final report on the thesis (and the corrected copies of the thesis) must be submitted to the Faculty of Graduate Studies by the appropriate deadline. The deadline for each of the graduation dates is published in the Academic Schedule of the Graduate Calendar. Extensions to these deadlines will be considered in exceptional circumstances only.

### Academic Requirement for Graduation

A cumulative degree grade point average of 3.0 or greater is required in those courses that constitute the program of study for graduation in the Faculty of Graduate Studies.

### Candidacy Examination

While the format and content of the candidacy exam will vary from unit to unit, the purposes of the candidacy exam in doctoral programs is to determine the student's competence in the discipline with respect to understanding and absorbing a broad spectrum of material, and then researching, identifying, analysing, synthesizing, and communicating ideas about that material in depth.

At the time specified by the advisory committee, normally within the first two years of the Ph.D. program but in no case later than one year prior to expected graduation, the student must successfully complete the formal candidacy examination. The format of the candidacy examination may vary with the department.

1. The examination is conducted according to a procedure established by the major department and approved by the Guidelines and Policy Committee of the Faculty of Graduate Studies.
2. This exercise is independent from the Thesis Proposal exercise.
3. The examination procedure must be made known to the students.
4. The Dean of Graduate Studies must be informed whether the candidate has passed or failed the candidacy examination (on the "Report on Ph.D. Candidacy Examination" form).
5. Students must be provided with feedback on their performance and access to the reasons for the pass/fail.
6. A pass decision of the examiners must be unanimous.
7. Any student who fails the candidacy examination twice will be required to withdraw from the Faculty of Graduate Studies.
8. On successful completion of this examination, the student will be considered a candidate for the Ph.D. degree.

### Thesis Proposal

The proposed thesis research must be approved by the advisory committee and, if appropriate, by the Research Ethics Review Committee before the work has begun on the thesis research or project.



A written thesis proposal must contain the research planned for the program and must be approved by the advisory committee. In order to approve the proposal the whole committee must meet as a committee. Approval of the completed thesis proposal must be documented on the Progress Report form and Ph.D. Thesis Proposal form and forwarded to the Faculty of Graduate Studies within 24 months of the student's initial registration in the program. Some departments may have specific procedures in place for approval of thesis proposals and students are advised to consult their departmental office. This exercise is independent from the candidacy examination exercise.

## 5.1 Thesis Regulations: Ph.D.

### General

An essential feature of Ph.D. study is the candidate's demonstration of competence to complete a research project and present the findings. **The thesis must constitute a distinct contribution to knowledge in the major field of study and the material must be of sufficient merit to be, in the judgement of the examiners, acceptable for publication.**

### Style and format:

The thesis must be written according to a standard style acknowledged by the particular field of study and recommended by the major department, be lucid and well written, and be reasonably free from typographical and other errors.

The electronic and paper copies of the thesis must be submitted in good, clear type. As long as the copies are clearly legible, the thesis may be reproduced by a method that is presented in the thesis guidelines which are available on the Faculty of Graduate Studies website: [http://umanitoba.ca/faculties/graduate\\_studies/](http://umanitoba.ca/faculties/graduate_studies/). Minimum left margin is 3.8 cm (1.5 inches), other margins are 2.5 cm (one inch). Wherever possible, these margins should be adhered to for illustrative materials. Minimum paper weight of the paper copy is 16 lb. Bond or equivalent.

Policies and procedures for the inclusion of published papers within the doctoral theses are governed by the supplementary regulations of individual departments. The following are the general policies and procedures of the Faculty of Graduate Studies:

-The candidate's specific contribution to each paper (in case of multiple-authored papers) must be clearly indicated;

-An abstract, full introduction, and conclusions must be included;

-Where more than one manuscript is included, connecting text and common abstracts, introduction, and conclusions must be included;

-There must be adherence to all other requirements as outlined in thesis guidelines.

### Deadlines and Details for submission of final copies:

The Academic Schedule in the Graduate Calendar should be consulted regarding dates by which theses must be submitted.

Following the approval of the thesis by the examining committee and the completion of any revisions required by that committee, the thesis must be submitted to the Faculty of Graduate Studies as follows:

One paper copy in unbound form, enclosed in an envelope or folder; and

One digital version submitted as an e-thesis at the MSpace website:

<https://mspace.lib.umanitoba.ca/index.jsp>

The e-thesis is the official copy. Students are encouraged to review the e-thesis submission requirements prior to creating a digital version. Electronic multimedia files or accompanying files that are part of an e-thesis should be posted to MSpace as separate files.

The paper copy will become a circulating copy. Where possible, the contents of the official electronic version must be replicated in the paper copy.

Both digital and paper copies of the thesis are required for the University Library and remain the property of the University of Manitoba.

## 5.2 Thesis Examination Procedures

### Final Examination For The Ph.D. Degree

Once the thesis along with the "Ph.D. Thesis Title and Appointment of Examiners" form is submitted to the Faculty of Graduate Studies, the final examination for the Ph.D. degree proceeds in two stages:

1. Examination of the candidate's thesis. Prior to the examination of the thesis, the advisor shall furnish a written statement that, in his/her opinion, the thesis is (or is not) ready to be examined by completing the "Ph.D. Thesis Title and Appointment of Examiners" form.

2. Oral examination of the candidate on the subject of the thesis and any matters relating thereto.

**Note:** A candidate has the right to an examination of the thesis if he/she believes it is ready for examination.



A thesis may not be formally submitted for examination more than twice.

### Formation of the Examining Committee

#### University of Manitoba (Internal) Examiners:

The advisory committee chair, in consultation with committee members, will recommend to the head of the major department the names of at least three internal thesis examiners, to be forwarded to the Dean of Graduate Studies for approval. These names shall include the student's advisor and two other persons, one of whom must hold a primary appointment within the major department and one of whom must hold a primary appointment outside the major department. All internal examiners must be members of the Faculty of Graduate Studies. In normal circumstances these internal examiners will be members of the student's advisory committee.

#### External examiner:

A distinguished scholar with particular experience in the field of the thesis research shall be chosen as the external examiner. The student's advisory committee shall make the selection, and the advisor should then make an informal inquiry as to the prospective external examiner's willingness to serve. If so, a nomination is then made by the head of the major department to the Dean of Graduate Studies. The external examiner must be from outside The University of Manitoba and the Dean of Graduate Studies makes the formal invitation to the external examiner.

**Note:** The external examiner should: hold a Ph.D.; hold an appointment with a recognized university or be a recognized scholar in their field; have no affiliation with the student or the advisor. The external must be considered at arm's length to the department and the University of Manitoba. While the definition of "arm's length" is left to the discretion of the department, be advised that justification may be required by the Faculty of Graduate Studies for this selection.

#### Changes in the examining committee:

The Dean of the Faculty of Graduate Studies must also approve changes in the membership of the examining committee. No changes shall be made in the examining committee after the thesis is distributed by the Faculty of Graduate Studies to the committee for examination.

**Note:** Should the thesis not be submitted for examination within 12 months after the appointment of the examining committee, the committee appointment will lapse and a new appointment shall be necessary.

#### Distribution of the Thesis For Examination

Sufficient copies for distribution to each member of the examining committee must be submitted to the Faculty of Graduate Studies in unbound form, with each set enclosed in a separate envelope or folder. Each copy must be

prefaced by an abstract of the thesis which includes the title, the author's name, and a brief summary of the results. It must be in a form acceptable to the student's advisor.

**Note:** It is the responsibility of the Faculty of Graduate Studies to distribute the thesis to all of the examiners.

### Responsibilities of the Examiners

#### Internal Examiners:

Each internal examiner (except the candidate's advisor), within one month of the receipt of the thesis, shall submit to the Dean of the Faculty of Graduate Studies a written report giving an evaluation of the thesis, noting its merits, deficiencies (if any) and, if appropriate, revisions. The report shall contain a statement as to whether or not the student may now proceed to the oral examination. The thesis shall be placed into one of the following categories:

1. The thesis represents a distinct contribution to the candidate's field of research and it is acceptable as it stands (or with minor revisions to either content, structure, or writing style. (The thesis has **not** received final approval, but the candidate **may proceed** to their oral examination).)
2. The thesis has merit since it makes a contribution to the candidate's field; however, there are research-related concerns that have the potential to be dispelled in the oral examination. The structure and writing are acceptable or require only minor revisions. (The thesis has **not** received final approval, but the candidate **may proceed** to their oral examination).)
3. The thesis has some merit, but it is not acceptable in its current state since it requires major revisions to one or more of its core components, viz., research content, structure, and writing style. (The candidate has **failed** attempt and cannot proceed to the oral examination.)
4. The thesis is unacceptable with respect to its core components, viz., research content, structure, and writing style. (The candidate has **failed** attempt and cannot proceed to the oral examination.)

#### Note:

1. The placing of the thesis into category (1) or (2) above does not mean that the thesis has received final approval.
2. The placing of the thesis into either category (3) or (4) constitutes a failure.

#### External Examiners:

The Dean of the Faculty of Graduate Studies will request the external examiner to give a detailed report on the merits and deficiencies of the thesis as well as an overall evaluation. The external examiner shall be asked to report on his/her findings in the same categories as those used by the internal



examiners. The advisor and the student must submit a declaration to the Faculty of Graduate Studies that neither party has performed collaborative research work with the external examiner within the last five years.

The external examiner is requested to present the report to the Dean of Graduate Studies within one month of the receipt of the thesis. Adequate time must be allowed for the transmission of the thesis and the receipt of the report.

The attendance of the external examiner at the candidate's oral examination is encouraged, but is not required.

**Note:** If the external examiner is not going to be present at the examination, the Dean of the Faculty of Graduate Studies will request him/her to submit questions and the expected answers to the questions to be posed to the candidate at the time of the examination. Normally, the Chair of the Examining Committee will pose the questions to the candidate and the candidate will not receive the questions prior to the examination.

#### Approval For Advancement to the Oral Examination

The Faculty of Graduate Studies must receive all examiners' reports (internal and external) at least two weeks prior to the intended date of the oral examination.

#### Guidelines For Advancement to the Oral Examination

When considering the candidate's advancement to the final oral examination, the committee of internal examiners shall use the following guidelines:

1. If all the reports place the thesis in category (1) or (2), advancement to the oral examination shall be automatic. The Dean of the Faculty of Graduate Studies shall send copies of all category (1) or (2) reports to each of the internal thesis examiners and the Department Head. Two copies of all the reports are sent to the Advisor who shall provide one copy to the student.

2. If one or more of the reports place the thesis in category (3) or (4), the Dean of Graduate Studies shall send copies of all the reports to each of the internal thesis examiners and the Department Head. Two copies of all the reports are sent to the Advisor who shall provide one copy to the student. The committee of internal examiners should strive to provide the advisor and the candidate with specific advice about the nature and scope of the revisions required and any other pertinent matters (such as the time that should elapse before the thesis will be accepted for reconsideration).

3. In the unlikely event that the internal examiners judge an unfavourable report by an external examiner to be unwarranted, they may recommend, through the head of the major department, that the Dean of Graduate Studies submit the thesis to a second external examiner.

#### Requirements Prior to Oral Examination

#### Scheduling

The examination will normally be held at either the University of Manitoba Fort Garry or Bannatyne Campus. Exceptions must have the unanimous agreement of all committee members. Normally, the oral examination shall be open to all members of The University of Manitoba community and shall be held at The University of Manitoba. In exceptional cases the final oral examination may be closed, for example when the results of the thesis research must be kept confidential for a period of time. In such cases, the advisory committee and Department head shall recommend such action to the Dean of Graduate Studies who may then approve that the final oral examination be closed to all but the examining committee and the Dean of Graduate Studies (or designate).

#### Student Information

At least two weeks prior to the oral examination, the student must submit to the Faculty of Graduate Studies the following information:

Biographical Data – outstanding points in career, awards, etc.

List of degrees obtained – where and when

List of the student's publications

The exact title of the thesis

An abstract of the thesis (not more than 350 words)

**Note:** The above documentation should be submitted in electronic form.

#### Notice of Examination

Except in the case of a closed examination and provided the information is received in sufficient time to meet publication deadlines, a notice of the student's oral examination will be posted on The University of Manitoba website. In addition, memoranda will be distributed by the Faculty of Graduate Studies to the department concerned. Note that students and faculty members who are not members of the examining committee are invited and encouraged to attend oral examinations but are not permitted to participate in the formal questioning.

#### Oral Examination

A student must pass an oral examination on the subject of the thesis and matters relating thereto before he/she may obtain the Ph.D. degree. An oral examination committee consisting of not fewer than four persons shall conduct the examination. One of these shall be the Dean of Graduate Studies or his/her representative who shall be Chair. The other members shall normally be the thesis examiners. It is expected that all internal members of the examining committee be present at the defense.



### Format of the Examination

The first part of the oral examination shall consist of an oral presentation by the candidate to include a summary of the salient points of the research within a time span of 25 to 30 minutes. This is followed by the questioning and examination of the candidate by the examination committee, that is normally about one and one-half hours but in no case longer than two hours.

The Chair may exercise discretion in inviting questions from guests.

### Procedures For The Conduct of The Examination

Before the candidate and guests are admitted to the examination room, the Chair should discuss the examination procedures with the examiners.

The Chair will introduce the candidate and request him/her to give a concise (25 to 30 minutes) oral presentation of the thesis to include a summary of the problems studied, the results and the conclusions.

Following the presentation, the Chair will invite questions from each member of the examining committee, taking care to ensure that each examiner has approximately equal time for questions. Normally, the question period should not exceed one and one-half hours.

It is the responsibility of the Chair to pose questions raised by the external examiner (if not in attendance).

The Chair may exercise his/her discretion in allowing questions from guests following completion of the formal examination.

**Note:** Once assuming the role of Chair, s/he foregoes the right to comment on the merits of the thesis whether or not s/he is an expert in the field.

### Decision of the committee:

Following completion of the formal examination, the candidate and spectators are required to withdraw from the examination room. The examiners will consider their report and will also determine the nature of and procedures for approval of any revisions that will be required prior to submission of the thesis. The committee may exercise its discretion on such matters as who must approve the required revisions, time limits for completion, the necessity for a second oral examination, and any other such matters. It shall be the responsibility of a designated member of the oral examination committee (normally the advisor) to ensure that all such revisions are completed before the copies of the thesis are submitted to the Faculty of Graduate Studies. The candidate will be recommended for the Ph.D. degree upon receipt by the Faculty of Graduate Studies of favourable results of the thesis examining committee and when the corrected copy of the electronic version of the thesis is submitted to MSpace and corrected copy of the paper

version of the thesis is submitted to the Faculty of Graduate Studies, providing all other degree requirements have been satisfied.

### Report of the committee:

The final judgement of the examiners on the thesis and the oral examination shall be reported to the Dean of the Faculty of Graduate Studies on the "Final Oral Examination of the Ph.D. Thesis" form. An approved verdict must be unanimous, and each examiner must indicate, by his/her signature, concurrence with the verdict. In the case of a failure for the thesis at the Ph.D. level a detailed written report will be prepared by the Chair and made available to the candidate and also submitted to the Faculty of Graduate Studies.

**Note:** A student will be required to withdraw when the Ph.D. thesis has been rejected twice at the stage where:

- a) The examining committee reports on the merits of the written thesis;
- b) The defense; or
- c) A combination of both stages.

### 5.3 Publication and Circulation of Thesis,

Every graduate student registering in a Ph.D. program at the University of Manitoba shall be advised that as a condition of being awarded the degree, he/she will be required:

1. To grant a license of partial copyright to the University and to the Library and Archives Canada for any thesis submitted as part of the degree program.

**Note:** This license makes the thesis available for further research only. Publication for commercial purposes remains the sole right of the author.

2. To provide a copy of the abstract for Dissertation Abstracts International and to authorize publication of the abstract in that publication. The forms and conditions pertaining to these license agreements are available at the Faculty of Graduate Studies Office. This and other related regulations may give rise to important questions of law and students may need additional legal advice on the copyright laws of Canada and/or other countries. Students who wish to obtain legal advice concerning their subsequent rights are advised to do so prior to signing the agreement. Signing the license agreements is normally done after the contents of the thesis have been delineated and the importance of copyright and/or patents fully comprehended. Publication in the above manner does not preclude further publication of the thesis or any part of it in a journal or in a book. In this case, acknowledgement should be made that the work was originally part of a thesis at The University of Manitoba.

**Note:**



**Copyright** - Copyright in theses and practica is protected in international copyright law. A copyright symbol © or (c) is incorporated on a page containing statements of permission to microfilm and to lend copies of the thesis or practicum. After completion, this page should be inserted in the thesis/practicum immediately following the title page. Blank copies of this page are available from the Faculty of Graduate Studies Office.

**Patents** – Refer to the section “Policy of Withholding Theses Pending Patent Applications” in this Guide.

**Restriction of theses for publication** - In exceptional cases not covered by the regulation concerning patents, where adequate cause can be shown to delay publication, the student may request the Dean of Graduate Studies to restrict access, for a period up to one year after submission, of the digital and unbound paper versions of a thesis submitted to The University of Manitoba. The Dean, in consultation with the student’s advisor, shall determine for what period, if any, access will be so restricted.

**Library and Archives Canada** – A microfiche of the thesis is forwarded to the Library and Archives Canada and is listed in a monthly and annual national bibliography, ‘Canadiana’, which is published by the National Library.

## SECTION 6: Policy of Withholding Thesis Pending a Patent Application

In 1970 the Board of Governors and Senate approved a policy on accepting research grants from outside agencies. This policy defined the right of agencies to defer release of information and thus ensure freedom of publications for research findings of University personnel. Occasionally, the University may also wish to restrict the release of a thesis pending patent application. This policy statement parallels the previous one in that it defines the right of the University to defer the release of a thesis and thus ensures freedom of publication for the research findings of a graduate student.

This situation may arise in two circumstances which are defined below and both of which are governed by the same set of regulations.

When a research project is known to contain patentable items as defined in the research contract, then it is the responsibility of the advisor to give written information of the restrictions on publication to the student prior to the start of the thesis research. If the student agrees to carry out the research, then the regulations given below will apply.

Where a patentable item is found during the course of research, then the advisor and the student may make application for patent rights through the University Patent Committee, and the following regulations will apply concerning the release of the thesis.

### Regulations Concerning Release of a Thesis During Application and Negotiation For Patents

The Dean of the Faculty of Graduate Studies will receive the approved thesis and copies of it as required by the Faculty regulations. On written joint request of the advisor and the student, the Dean will keep the thesis and copies of it in his/her office for a period up to one year.

For further information, reference should be made to the thesis copyright license.

## SECTION 7: Extension of Time to Complete Program of Study

All requests for extensions will normally be dealt with administratively and reported, in summary form, to the Executive Committee of Graduate Studies for information. Requests for an extension are reviewed by the Faculty of Graduate Studies on a case by case basis. The extension time requested must closely reflect the time required to complete the program. More than one extension period may be considered, but the total time for all extensions will not normally exceed two years. Requests for extension must be accompanied by a realistic timeline that has been agreed upon by the student and supervisor and endorsed by the Department Head. Students granted extensions may be asked to enrol full-time during the period of the extension and may also be required to meet contingencies or carry out remedial work to be associated with the extension. The student must complete the “Request for Extension” form and submit it to his/her major department for recommendation to the Faculty of Graduate Studies at least four months prior to the deadline date for completion of program requirements.

## SECTION 8: Leave of Absence Regular Leave

A regular leave is intended to allow students to meet family, travel or employment responsibilities or plans and circumstances not covered by the parental or exceptional leaves. At the request of a graduate student, the head of the student’s department may recommend to the Dean of Graduate Studies that a student be granted a leave of absence for a period of time not to exceed one year. While on leave of absence, a student would not be expected to maintain study and/or thesis research work. Students on regular leave of absences will be required to maintain continuous registration and pay the appropriate continuing fee. If a student has program tuition fees (as opposed to continuing fees) owing at the time of the granting of the leave, the tuition fees will be deferred until the student returns from leave, however, the continuing fee will be levied.\* A regular leave of absence status does not extend the time limits as outlined in the Faculty regulations.

**\*Program Fees:** The continuing fee in effect at the time of the granting of the leave will be levied. However, if the student returns from leave in January, the normal tuition fee will be levied less the continuing fee already paid.



### Exceptional Leave

In exceptional circumstances for medical or compassionate reasons (e.g. the need to care for an ailing relative), at the request of the graduate student, the head of the student's department may recommend to the Dean of the Faculty of Graduate Studies that a student be granted an exceptional leave of absence for a period of time not to exceed one year. While on leave of absence for exceptional reasons, a student is not permitted to maintain study and/or thesis research work, would not be required to maintain continuous registration, nor pay tuition fees. In addition, the leave period would not be included in the time period allowed for the completion of the degree. This leave is not intended to cover circumstances related to travel, employment or other financial concerns.

**Fees:** Students are not expected to pay fees for the term in which they have been granted an exceptional leave. Upon return from the exceptional leave students will be assessed fees as determined by the Registrar's Office.

### Parental Leave

A graduate student who is bearing a child or who has primary responsibility of the care of an infant or young child immediately following a birth or adoption of a child is eligible for parental leave. The request should be made through the student's department, normally for a leave of four to twelve months. Leaves of other duration will be considered on an individual basis. Parental leaves must correspond with (an) academic term(s). While on leave of absence for parental reasons, a student is not permitted to maintain study and/or thesis research work. The leave period is not included in the time period allowed for completion of the degree.

**Fees:** Students are not expected to pay fees for the term in which they have been granted a parental leave. Upon return from the parental leave students will be assessed fees as determined by the Registrar's Office.

**Note:** At the time of approval of an application for leave, the procedures for the return of the student to the department at the completion of the leave must be stipulated.

### Awards and Leave of Absence

Students granted exceptional or parental leave would retain the full value of a University of Manitoba Graduate Fellowship or other award whose terms and conditions are established by the Faculty of Graduate Studies. Such an award will be suspended at the onset of the leave and reinstated at the termination of the leave period (4 to 12 months) provided that the student returns to full time study at that time.

**Note:** Other awards will be paid according to the conditions established by the donor or granting agency.

### Graduate Student Vacation Entitlement

Students are entitled to three weeks vacation throughout a 12-month period.

## SECTION 9: Appeals – Procedures And Guidelines

### General

Students who disagree with a decision have access to the appeal routes as laid out by the various Faculty of Graduate Studies and University of Manitoba appeal processes.

Students may file academic, discipline, admission, grade, and fee appeals. You may refer to this section of the Faculty of Graduate Studies Academic Guide and the University of Manitoba Governing Documents ([http://umanitoba.ca/admin/governance/governing\\_document/s/index.html](http://umanitoba.ca/admin/governance/governing_document/s/index.html)).

The Executive Committee of the Faculty of Graduate Studies, through its Appeal Panel by delegation from the Faculty of Graduate Studies Council, is empowered to deal with student appeals from departmental/unit recommendations or Faculty of Graduate Studies actions provided the departmental/unit appeal process (if applicable) has dealt with the matter. Student appeals must be made in writing and should be directed to the Secretary of the Appeals Committee, Faculty of Graduate Studies, 500 University Centre.

Students in a Joint Master's Program must follow the appeals process described in the document *Regulations Governing the Joint Master's Programs between the University of Manitoba and the University of Winnipeg* which is available at: [http://umanitoba.ca/faculties/graduate\\_studies/admin/index.html](http://umanitoba.ca/faculties/graduate_studies/admin/index.html)

### Academic Appeals

Decisions on academic matters such as qualifying examinations, candidacy examinations, thesis examinations, etc. that have been made by a student's home unit (i.e. department, school or program) should first be appealed to the home unit. A unit's appeal procedures should be outlined in its graduate supplemental regulations which are available at: [http://umanitoba.ca/faculties/graduate\\_studies/admin/532.html](http://umanitoba.ca/faculties/graduate_studies/admin/532.html). If a unit denies a student's appeal, the appeal may be made to the Faculty of Graduate Studies. Decisions made directly by the Faculty of Graduate Studies (e.g. Required to Withdraw) must be appealed to the Faculty of Graduate Studies as the first level of appeal and addressed to the Associate Dean responsible for that particular unit. The Associate Dean will consider the appeal. If the appeal is granted, the student will be notified with copies to the unit concerned. If the appeal is denied, the Dean will automatically consider the appeal. If the appeal is granted by the Dean, the student will be notified with copies to the unit concerned. If the appeal is denied by the Dean, the student will be notified with copies to the unit.



The student can appeal the Dean's decision to the FGS Appeals Committee within fifteen (15) business days. These student appeals should be directed to the Secretary of the Faculty of Graduate Studies Appeals Committee. The disposition of the appeal by the FGS Appeals Committee will be communicated to the Dean of Graduate Studies who will communicate the decision to the student, with copies to the unit concerned.

An academic decision of the Faculty of Graduate Studies Appeal Panel is appealable only to the Senate Committee on Academic Appeals (see University of Manitoba Governing Documents: Students: Policy: Academic Appeals Procedures and Guidelines).

#### Composition of the Academic Appeal Panel

See Faculty of Graduate Studies Appeals Committee Terms of Reference at [http://umanitoba.ca/faculties/graduate\\_studies/admin/126.html](http://umanitoba.ca/faculties/graduate_studies/admin/126.html)

#### Consideration of an Academic Appeal

A hearing panel shall consider an appeal only after it has been heard by the body responsible for appeals in the unit concerned and by the Associate Dean and Dean. The hearing panel shall not consider material submitted to them which was not submitted to the unit/Associate Dean/Dean.

The Academic Appeal Committee shall only hear academic appeals on the following grounds:

- (i) Failure of the unit or the Associate Dean/Dean to follow procedures;
- (ii) Failure of the unit or the Associate Dean/Dean to follow the rules of natural justice;
- (iii) Failure of the unit or the Associate Dean/Dean to reasonably consider all factors relevant to the decision being appealed;
- (iv) That a Faculty of Graduate Studies or unit governing document has become inapplicable through lapse of time or was unfairly applied;
- (v) That there is an apparent conflict between a Faculty of Graduate Studies governing document and a unit governing document;
- (vi) Failure of the Faculty of Graduate Studies or the unit to comply with applicable legislation.

#### Academic Appeal Deadlines

Students must submit an academic appeal within fifteen (15) working days of the date when the student was informed in writing of the action to be appealed and include the appropriate appeal form (available at:

[http://umanitoba.ca/faculties/graduate\\_studies/forms/index.html](http://umanitoba.ca/faculties/graduate_studies/forms/index.html)), a cover letter (clearly explaining the grounds for the appeal with specific reference to the ground(s) noted in the previous section) including any supporting documentation, a copy of the letter of decision from the last appeal level, and a copy of all the documentation submitted to the last appeal level. No new information may be submitted to the next higher level appeal body.

The remedy sought of the appeal body shall not differ from that requested of the last appeal level unless extraordinary circumstances are presented.

Appeals to the Senate Committee on Academic Appeals shall be filed with the University Secretary within twenty (20) working days after the mailing of the notice of decision from which the appeal is made. The Chair of the Senate Committee on Appeals shall have discretion to extend this deadline if he/she determines that there are special circumstances which justify or excuse the delay.

#### Discipline Appeals

The specific jurisdiction of each of the Disciplinary Authorities is outlined in: University of Manitoba Governing Documents: Students: Bylaw: Student Discipline. See 2.3.3: Table 1: Jurisdiction of Disciplinary Authorities.

When the appeal is against a disciplinary decision made by the Faculty of Graduate Studies, the appeal routes and procedures as outlined in the following shall prevail: University of Manitoba Governing Documents: Students: Procedures: Student Discipline.

An appeal of a decision of the Associate Dean of the Faculty of Graduate Studies shall be appealed to the Dean of the Faculty of Graduate Studies. An appeal of a decision of the Dean of the Faculty of Graduate Studies shall be made to the Local Discipline Committee (LDC). The LDC will inform the Dean of Graduate Studies of its decision who will in turn inform the student. An appeal of a decision of the LDC shall be made to the University Discipline Committee which shall be delivered to the Secretary of the University Discipline Committee (UDC) with a copy to the Dean of the Faculty of Graduate Studies.

#### Discipline Appeal Deadlines:

Students must submit an disciplinary appeal within ten (10) working days of the date when the student was informed in writing of the action to be appealed and include the appropriate appeal form (available at: [http://umanitoba.ca/faculties/graduate\\_studies/forms/index.html](http://umanitoba.ca/faculties/graduate_studies/forms/index.html)), a cover letter including justification for the appeal and any supporting documentation.

#### Appeal of Violation/Penalty:

As per section 2.7.2 of the University of Manitoba Governing Documents: Students: Procedures: Student Discipline,



The Student shall clearly indicate in the cover letter of appeal whether they are appealing the decision on:

- (a) the finding of facts;
- (b) the disposition determined by the disciplinary authority; or
- (c) both (a) and (b).

The appeal shall be by way of a trial *de novo* unless the appeal has been made only in relation to the severity of the disciplinary action imposed.

#### Limitations on Appeal Rights

Students who disagree with a decision have access to the appeal routes as laid out by the various Faculty of Graduate Studies and University of Manitoba appeal procedures. Student appeals may be limited by the scope of the inquiry available at each level and category of appeal, as well as the time limitations for submission of appeals.

A further limitation is that the Faculty of Graduate Studies rules and regulations, established to uphold the academic rigour of the University of Manitoba, are generally not subject to appeal unless an appeal route is otherwise stipulated. In situations where no appeal route is available, a student may make a written request to the Dean of the Faculty of Graduate Studies.

#### Procedures

##### Appeal Hearing:

All appeals shall be submitted in written form to the Secretary of the Faculty of Graduate Studies Appeals Committee. The Associate Dean and/or Dean may, on consideration, attempt first to reach an informal solution. If that is judged by the Associate Dean and/or Dean to be inappropriate or unfeasible, a hearing panel will be formed. Hearings shall be held in closed session unless at least one party requests an open hearing and all parties to the appeal agree to the request.

The Associate Dean or Dean shall inform the appropriate Unit Head of the nature of the appeal and forward a copy of the student's written submission. The Unit Head or Associate Dean will prepare a written response to the Chair of the Hearing Panel within ten working days. The Secretary of the Appeals Committee shall strike a hearing panel and set a hearing as soon as possible after receipt of the written response.

Appeal hearings shall be arranged as expeditiously as possible and all parties involved shall be given notice of the appeal hearing within a reasonable timeframe.

The student (known as the Appellant), his/her representative and the Faculty and/or Unit representative (known as the

Respondent(s)) shall receive the appeal package at least one week prior to the date set for the hearing of the appeal.

Normally, no additional materials may be presented after the distribution of the appeal package or at the time of the hearing. In the case where a request is made to submit additional materials, the Chair may postpone the hearing and allow no more than ten working days for the other party to respond to the new materials.

The Appellant and Respondent(s) shall have the right to appear before the hearing panel and suggest witnesses that he/she wishes to appear before the panel. It will be at the discretion of the Chair to determine whether any witnesses are called. It is the responsibility of the party calling witnesses to ensure that the witnesses are informed of the date and time of the hearing. The Chair of the Hearing Panel (via the Secretary of the Appeals Committee) shall be notified not less than four working days prior to the hearing of the suggested witnesses.

The Appellant has the right to appear in person or to be represented by a Student Advocate or a fellow student or other full-time member of the University community not receiving payment for appearing or working for legal aid. One member of the Appellant's immediate family and his/her lawyer may be present but only as observers who do not participate in the hearing. The Chair of the Hearing must be notified of any observers at least four working days prior to the hearing.

All members of a hearing panel shall participate in all of the deliberations essential for the determination of the matter in dispute. If, in the course of hearing an appeal, a member is not present at the commencement of the hearing or a member cannot continue, the panel may elect to proceed in the absence of that member. If more than one member is not present at the commencement or cannot continue, the hearing panel must adjourn.

As a first item of business in dealing with any academic appeal, the hearing panel shall consider (in closed session) whether there are sufficient grounds to proceed with the appeal hearing and any requests it has received to hold an open session. When a hearing panel determines that there are insufficient grounds to proceed with an appeal hearing, it shall notify the Appellant, his/her representative and the Respondent(s) immediately and report its reason(s) to the Dean of the Faculty of Graduate Studies. If a request is made to hold an open hearing, the panel shall determine what parts of the hearing shall be open.

Normally the Appellant (and representative) and the Respondent(s) will be present during the presentation of the other's case. During the hearing, the Appellant or the Respondent(s) may request a change in the open or closed nature of the hearing, at which time the hearing panel shall determine what parts of the hearing will be open.

The hearing panel may request the Appellant, Respondent(s) or any other parties to appear or provide additional information in a particular case before reaching a decision.



All parts of the meeting required to deliberate or determine resolution of the appeal shall be held *in camera*.

The Chair of the Hearing Panel shall inform the Dean of the Faculty of Graduate Studies in writing of the panel's decision who shall inform, in writing, the Appellant, his/her representative and the Respondent(s) of the disposition of the appeal, the reasons for the decision, and whatever further action may result.

#### Disqualification:

Any member of the Appeal Panel shall be disqualified from hearing an appeal who is a faculty member or a student in the Appellant's home unit or is or was a member of a committee or board responsible for making the decision being appealed.

#### Other Appeals

##### Admission Appeals:

Appeals on Admission to the Faculty of Graduate Studies are appealed directly to the Senate Committee on Admission Appeals. Refer to: University of Manitoba Governing Documents: Students: Policy: Admission Appeals Procedures and Guidelines.

##### Fee Appeals:

Fee appeals are administered by the Registrar's Office. Refer to: <http://umanitoba.ca/student/records/fees/830.htm> or visit the Registrar's Office, 400 University Centre.

##### Grade Appeals:

Appeals of term work or final grades in courses are administered by the Registrar's Office. Refer to: [http://umanitoba.ca/student/records/exams\\_grades\\_hub.html](http://umanitoba.ca/student/records/exams_grades_hub.html) or visit the Registrar's Office, 400 University Centre.

##### Assistance with Appeals

The Office of Student Advocacy, 519 University Centre, provides information and assistance to students regarding all appeals and appeals processes. It is very strongly recommended that students contact the Office of Student Advocacy for assistance **prior** to appealing a decision.

## Programs

### Agribusiness and Agricultural Economics

**Head:** Brian T. Oleson

**Campus Address/General Office:** 353 – 66 Dafoe Road (Agricultural and Food Sciences Building)

**Telephone:** (204) 474-9259

**Fax:** (204) 261-7251

**Email Address:** [AgBus\\_GradStudies@Umanitoba.Ca](mailto:AgBus_GradStudies@Umanitoba.Ca)

**Website:** [www.umanitoba.ca/afs/agribusiness](http://www.umanitoba.ca/afs/agribusiness)

**Academic Staff:** Please refer to the Faculty at [www.umanitoba.ca/afs/agribusiness](http://www.umanitoba.ca/afs/agribusiness)

The Department of Agribusiness and Agricultural Economics offers graduate instruction leading to the M.Sc. degree. The Ph.D. program is offered through the Economics Department, with students electing an Agricultural Economics field of specialization. The purpose of graduate training in Agribusiness and Agricultural Economics is to develop competence in solving real world problems relating to food production, policy, risk management, marketing, finance, international trade, resources, international development, agribusiness management, and the environment.

Students undertaking graduate studies in Agribusiness and Agricultural Economics may specialize in one of the above areas of research.

#### Research Facilities

The department has excellent computer facilities, support staff and offices for graduate students.

#### M.Sc. in Agribusiness and Agricultural Economics, Admission

Applicants must possess the equivalent of the B.Sc. degree in Agribusiness or a four-year degree from the University of Manitoba, or any other degree which provides an equally strong basis for a graduate program in the department. If the applicant has deficiencies of more than 12 credit hours, a requirement may be to successfully complete a pre-Master's program before being admitted to a regular graduate program. Please contact the Department for details.

The following courses, or their equivalents, are prerequisites to the graduate program and indicate the scope and level of training required for admission:

- 1) MATH 1310 Matrices for Management and Social Sciences (or any equivalent course in linear algebra, e.g. MATH 1300)



and

MATH 1520 Introductory Calculus for Management and Social Sciences (or any equivalent course in calculus, e.g. MATH 1500)

(or the former MATH 1680 Mathematics for Agriculture and Related Sciences)

2) Microeconomic Analysis 1 (ECON 2450 regular or ECON 2700 Honours)

3) Macroeconomic Analysis 1 (ECON 2470 regular or ECON 2800 Honours)

4) Introduction to Econometrics (e.g. ABIZ 3080)

The following courses are not a requirement, but may be recommended:

Microeconomic Analysis 2 (ECON 2460 regular or ECON 3700 Honours)

Macroeconomic Analysis 2 (ECON 2480 regular or ECON 3800 Honours)

Intermediate Econometrics (e.g. ABIZ 4120)

ECON 6040 Survey of Mathematical Topics for Economics is highly recommended, and will normally be taken in late summer/early fall at the beginning of the Graduate program.

**Application Deadlines**

The Department of Agribusiness and Agricultural Economics allows students to begin their M.Sc. program on either 1 September or 1 January. For admission to either of these start dates, Canadian and U.S. students should send their applications with complete supporting documents to the Faculty of Graduate Studies by June 1 or October 1 respectively. International students should send their applications with complete supporting documents to the Faculty of Graduate Studies by March 1 or July 1 respectively.

**Program Requirements**

Two programs of study are available:

**Program 1:**

The thesis option entails a minimum of 18 credit hours consisting of:

Courses	Credit Hours
Microeconomics, normally ECON 7722 (or the former ECON 7720), or	3-6
ABIZ 7950 (or the former ABIZ 7100) <i>plus</i> ABIZ 7940* Quantitative Methods, which could include approved courses in Econometrics, Management Science or Statistics	3
*Electives prescribed by major advisor in consultation with the student, normally at 7000 level	9-12
Total Credit Hours	18

\*With the major advisor's permission, ECON 3700 may be used in conjunction with either ABIZ 7950 (or the former ABIZ 7100) or ABIZ 7940 to meet the Microeconomics requirement. Another 12 units of electives are required if just ECON 7722 is chosen (and 9 units of electives are required if one of the other combinations is chosen).

Every candidate must complete an acceptable thesis and pass an oral examination based primarily on the thesis.

All students in the M.Sc. thesis program are required to present two graduate seminars open to the public. The first presentation shall be on the thesis proposal paper. The second presentation will be on their completed research.

**Program 2**

The comprehensive option normally entails a minimum of 27 credit hours consisting of:

Courses	Credit Hours
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Graduate Studies



Microeconomics, normally ECON 7722 (or the former ECON 7720), <i>or</i>	3-6
ABIZ 7950 (or the former ABIZ 7100) <i>plus</i> ABIZ 7940* Quantitative Methods, which could include approved courses in Econometrics, Management Science or Statistics	3
*Electives prescribed by major advisor in consultation with the student, normally at 7000 level	18-21
Total Credit Hours	27

\*With the major advisor's permission, ECON 3700 may be used in conjunction with either ABIZ 7950 (or the former ABIZ 7100) or ABIZ 7940 to meet the Microeconomics requirement. Another 21 units of electives are required if just ECON 7722 is chosen (and 18 units of electives are required if one of the other combinations is chosen).

In addition to the coursework for the comprehensive option, one research paper will be assigned, supervised, and evaluated by a committee of three, consisting of two members from the Department of Agribusiness and Agricultural Economics and one member from outside the Department, with the student's advisor acting as chair. Upon satisfactory completion of all the coursework and the research paper, the student must pass a comprehensive oral examination. The student will be held responsible in the comprehensive oral examination for knowledge and understanding of the questions relating to the student's program of study and the research paper.

Specialization in business management in agriculture is available under the comprehensive option for a selected number of qualified students. These students are required to take at least 12 units of courses within the Asper School of Business/Faculty of Management at the 6000 or 7000 level.

Second language reading requirement: none

Expected time to graduation: two years

Ph.D. in Economics with a research specialization in Agribusiness and Agricultural Economics\*,  
\*A Ph.D. is offered by the Department of Economics with the cooperation of the Department of Agribusiness and Agricultural Economics, with students electing an Agricultural Economics field of specialization.

#### Admission

1) Except as provided in 2) below, applicants for admission to the Ph.D. program must have completed the entrance requirements and the program requirements of an M.A. degree in Economics or Agricultural Economics equivalent to that awarded by the University of Manitoba.

2) In exceptional cases, applications may be considered from students who have completed an Honours degree in Economics or Agricultural Economics equivalent to that awarded by the University of Manitoba. In such cases, the applicant will be required to fulfil, in addition to the requirements below, all course work requirements for the M.A. degree by comprehensive examination option.

#### Application Deadlines

Students intending to begin a Ph.D. in Economics with a research specialization in Agricultural Economics will begin their program in the fall. Please note that the Department of Economics does not normally accept students in the January session, as the required Math and Theory courses start in the fall. Canadian and U.S. students should send their applications with complete supporting documents to the Faculty of Graduate Studies by May 1. International students should send their applications with complete supporting documents to the Faculty of Graduate Studies by January 15.

#### Field in Agricultural Economics

Students electing a research specialization in Agricultural Economics are required to complete the Agricultural Economics field examination, as one of the two required fields of concentration. Other students in Economics may also take this exam.

The following courses are recommended in preparing for this exam: Advanced Agricultural Demand Analysis (ABIZ 7950) - *or* the former Advanced Agricultural Marketing (ABIZ 7100) - *and* Production Economics (ABIZ 7940). Students are also advised to complete a graduate course in econometrics. In addition a set of extra readings (on seminal applications of marketing and production theory in agriculture) will be made available by the Department Graduate Advisory Committee (DGAC) in Agribusiness and Agricultural Economics to students intending to write this field.

If either of the recommended courses has not been offered during the student's Ph.D. program, then a brief directed studies course under Agricultural Economics (AE) supervision will be arranged to assist the student in the subject area. DGAC will choose members of AE to grade the examinations (both written and oral).

Second language reading requirement: none

Expected time to graduation: four years



Not all courses are offered every year. Please check the Aurora catalogue to find out when a course is offered.

[https://aurora.umanitoba.ca/banprod/bwckctlg.p\\_disp\\_dyn\\_ctlg](https://aurora.umanitoba.ca/banprod/bwckctlg.p_disp_dyn_ctlg)

**ABIZ 7110** Attributes of Market Organization Cr.Hrs.3  
(Formerly 061.711) Analysis of agricultural market structure, conduct and performance of processing industries.

**ABIZ 7140** Resource Efficiency and Allocation in Agriculture Cr.Hrs.3  
(Formerly 061.714) Seminar on research issues in production economics related to technological change, risk and uncertainty, management and firm growth.

**ABIZ 7230** Agricultural Market Regulation Cr.Hrs.3  
(Formerly 061.723) A review of economic theories of regulation and their application in agricultural marketing. Analysis of specific regulation in agricultural markets.

**ABIZ 7240** Research in Agricultural Marketing Cr.Hrs.3  
(Formerly 061.724) Advanced economic theory and quantitative techniques relevant to agricultural marketing. Topics include model building, market demand and supply, market regulation, and review of literature on marketing research.

**ABIZ 7250** Econometric Models and Methods Cr.Hrs.3  
(Formerly 061.725) Logical foundation of econometrics, model building, econometric methods and problems encountered in specification, estimation, verification, and prediction.

**ABIZ 7270** Research Methodology Cr.Hrs.3  
(Formerly 061.727) Critical discussion of scientific methodology and the scientific status of agricultural economics. Discussion of methodological issues as they relate to the research process in agricultural economics.

**ABIZ 7300** Topics in Agricultural Economics Cr.Hrs.3  
(Formerly 061.730) Application of economic analysis to contemporary problems in agriculture.

**ABIZ 7310** Agricultural Economic Development Cr.Hrs.3  
(Formerly 061.731) Theory and policy of agricultural development in underdeveloped countries: problems of stimulating growth in agriculture and evaluation of alternative approaches to economic development of agriculture. Prerequisite: consent of instructor.

**ABIZ 7330** Transportation Economics and Research Cr.Hrs.3  
(Formerly 061.733) Rate determination and cost analysis for different modes of transportation; transportation issues in Canadian agriculture; and research techniques in transportation problems. Prerequisite: consent of instructor.

**ABIZ 7350** Regional Development Cr.Hrs.3  
(Formerly 061.735) Review policy, goals, theories, methods and applications relevant to analyzing Canadian and developing country rural development, regional economic

growth and project evaluation.

**ABIZ 7360** Current Issues in Policies Relating to Agriculture Cr.Hrs.3  
(Formerly 061.736) Seminar dealing with current issues in policies relating to agriculture.

**ABIZ 7370** Concepts of Agribusiness Cr.Hrs.3  
(Formerly 061.737) Analysis of interrelationships within agricultural sector and between agricultural and nonagricultural sectors.

**ABIZ 7380** Agricultural Policy Cr.Hrs.3  
(Formerly 061.738) Bearing of economic theory on agricultural policy: relevance of allocative efficiency, distributive equity and other criteria, and economic evaluation of alternative policies.

**ABIZ 7390** Applied Optimization Cr.Hrs.3  
(Formerly 061.739) Application of linear and non-linear programming techniques to Agricultural Economics research. Emphasis on interpretation of conditions which ensure optimality for programming techniques. Prerequisites: ABIZ 2520 (or 061.252) or SCM 2150 (or 164.2150) or 027.215.

**ABIZ 7400** Forecasting and Simulation Models Cr.Hrs.3  
(Formerly 061.740) Application of simulation modelling to characterizing and predicting the behaviour of complex systems (ecological, engineering and economic). Foundations of simulation and statistical approaches to analysis are emphasized.

**ABIZ 7410** Agricultural Finance Cr.Hrs.3  
(Formerly 061.741) Analysis of financial structure and goal criteria of agricultural firms, analysis of financial markets and institutions, evaluation and application of techniques in risk analysis, investment analysis, financial analysis, and growth and evaluation models.

**ABIZ 7430** Advanced Theory of Resource Economics Cr.Hrs.3  
(Formerly 061.743) Economic theory of the development and management of natural resources. Application of capital theory, investment theory, the theory of externalities and decision-making theories to resource utilization and management. A strong background in microeconomics is required. Also offered as ECON 7430 by the Department of Economics.

**ABIZ 7460** Research Management Cr.Hrs.3  
(Formerly 061.746) Application of research management concepts in agriculture and the resource sectors. Research definitions and methodology; the macro environment in relation to research (social and grantor priorities, economic and institutional constraints, institution and project (micro) level (priorities, objectives, budgeting, time and personnel management, performance assessment): proposal and report writing; project evaluation.

**ABIZ 7630** Theory of International Trade Cr.Hrs.3  
(Formerly 061.763) Theories of trade flow; trade and income distribution; economic growth and changes in trade flows; instruments of trade intervention; international labour and capital movements; and economic integration. Also offered as ECON 7630 by the Department of Economics. Students



may not hold with the former 061.728

**ABIZ 7940** Production Economics Cr.Hrs.3  
(Formerly 061.794) Development of static microeconomic theories of the firm, functional forms, aggregation issues, productivity analysis, risk and uncertainty, and an introduction to dynamics. The following are emphasized; a rigorous treatment of the models using duality; a critical understanding of the limitations and possibilities for generalizing the models; and relevance of the models for empirical research, especially in agriculture. Also offered as ECON 7940 by the Department of Economics. Students may not hold credit with the former 018.793 or 061.713.

**ABIZ 7950** Advanced Agricultural Demand Analysis Cr.Hrs.3

Critical evaluation of economic theory as applied to agricultural demand. Topics include demand systems; equilibrium; product transformation over time, place and form; and price analysis. Also offered as ECON 7950 by the Department of Economics. Not to be held with ECON 7950 or the former ABIZ 7100 or the former ECON 7900.

## Animal Science

**Head:** M.L. Connor

**Campus Address/General Office:** 201 Animal Science Building

**Telephone:** (204) 474 9383

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**Email Address:** [animal\\_science@umanitoba.ca](mailto:animal_science@umanitoba.ca)

**Website:** [www.umanitoba.ca/afs/animal\\_science](http://www.umanitoba.ca/afs/animal_science)

**Academic Staff:** Please refer to the Faculty at [www.umanitoba.ca/afs/animal\\_science](http://www.umanitoba.ca/afs/animal_science)

The department offers graduate programs leading to the M.Sc. and Ph.D. degrees in behaviour, genetics, nutrition or physiology of farm animals. Research programs serve the animal industries by the application of basic sciences to current problems in the industry. Advanced training in the Department of Animal Science prepares M.Sc. and Ph.D. graduates for positions in animal industry organizations, government and academic institutions.

Graduate programs in the Department of Animal Science may encompass a range of activities, and students should expect to receive experience in laboratory analysis, experimental design and analysis, and work with animals, depending on the research project. Research programs will frequently involve collaborative work with other Departments at the University of Manitoba, or with industry or government partners. The Department also participates in the Inter-departmental Ph.D. program in Food and Nutritional Sciences. There is a strong international orientation to graduate studies in the Department of Animal Science since many students are from outside Canada.

### Fields of Research

Research conducted in the Department of Animal Science includes: basic and applied nutrition, including functional

feeds; gut microbiology; molecular biology; physiology, behaviour and health; functional foods; animal production systems; and genetics. Experimental species include cattle (beef and dairy), poultry (chickens, turkeys, duck, geese), sheep, swine, laboratory animals (mice, rats, rabbits) and wildlife animals. Studies may involve feed and food safety and toxicology. Research activities in the Department of Animal Science are supported with funds from a variety of government organizations including the National Sciences and Engineering Research Council (NSERC), national and international industry bodies, as well as Provincial commodity groups.

### Research Facilities

Extensive facilities for all animal and poultry research are available. The Animal Science Building contains spacious and well-equipped laboratories, classrooms and graduate student offices. New animal research facilities are available on campus for all species. Research programs in dairy cattle, beef cattle and swine also utilize facilities at the 525 hectare Glenlea Research station, located 23 km from campus which includes the National Centre for Livestock and the Environment.

### M.Sc. in Animal Science, Admission

Applicants normally require a Bachelor of Science in Agriculture degree with a major in Animal Science; however students with other degrees (e.g., B.Sc. Honours or General) may be accepted. In these latter instances students, depending on their academic background, may be required to complete a pre-Master's program or to register for courses additional to those normally required in the Master's program. Please contact the Department for details.

### Application Deadlines

Students may begin their program on either September 1, January 1, May 1 or July 1. For admission on each of these start dates, Canadian and U.S. students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than four (4) months before the intended start date. International students should send their applications with complete supporting documentation to the Faculty of Graduate Studies for screening so that the department may receive the application no less than seven (7) months before the intended start date.

### Program Requirements

#### Program A:

Coursework and Thesis Requirements

- A minimum of 12 credit hours of coursework in addition to ANSC 7140.
- A minimum of 6 credit hours at 7000 level in the major subject.



- A minimum of 3 credit hours in an ancillary subject.
- Thesis and oral examination.

Expected time to graduation: three years if continuing from an M.Sc. program

#### Program B:

##### Coursework and Comprehensive Examination Requirements

- A minimum of 30 credit hours in coursework, in addition to ANSC 7140.
- 12-18 credit hours in the major subject at the 7000 level.
- 6-12 credit hours in an ancillary subject(s).
- Comprehensive examination.

Second language requirement: none

Expected time to graduation: two years

#### Ph.D. in Animal Science, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

#### Application Deadlines

Students may begin their program on either September 1, January 1, May 1 or July 1. For admission on each of these start dates, Canadian and U.S. students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than four (4) months before the intended start date. International students should send their applications with complete supporting documentation to the Faculty of Graduate Studies for screening so that the department may receive the application no less than seven (7) months before the intended start date.

#### Program Requirements

Minimum Program requirements are outlined in the Graduate Studies Regulations Section of this Calendar.

In addition, Ph.D. students must take ANSC 7390 "Advanced Animal Science Seminar".

#### Interdepartmental Ph.D. Program

Requirements for the Interdepartmental Ph.D. program in Food and Nutritional Sciences are given in the section entitled "Interdisciplinary Programs and Courses" (Section 34.2).

Second language reading requirement: none

**ANSC 7140** Animal Science Seminar Cr.Hrs.3 (Formerly 035.714) Reports and discussions on current problems and investigational work with mammals and poultry. This course is graded pass/fail.

**ANSC 7220** Genetic Principles of Animal Improvement Cr.Hrs.3 (Formerly 035.722) Designed for the development of a framework of theory for the study of the genetics of populations. Changing gene frequency. Genetic and environmental subdivision of the phenotypic variance. Principles of selection. Prerequisite: ANSC 3500 (or 035.350) or the former 035.310 or equivalent.

**ANSC 7360** Advanced Reproductive Physiology, Male Cr.Hrs.3 (Formerly 035.736) A lecture-seminar course on sexual function and testicular physiology in males of livestock species; environmental factors influencing reproductive efficiency; recent developments in semen preservation and artificial insemination. Offered in 2005-2006 and alternate years thereafter.

**ANSC 7370** Advanced Reproductive Physiology, Female Cr.Hrs.3 (Formerly 035.737) A lecture-seminar on current topics related to female reproduction in the livestock species. Offered in 2006-2007 and alternate years thereafter.

**ANSC 7380** Endocrine Control of Animal Metabolism Cr.Hrs.3 (Formerly 035.738) A lecture-seminar course on current topics concerning the control of physiological processes of - importance in domestic animal species. Offered in 2005-2006 and alternate years thereafter.

**ANSC 7390** Advanced Animal Science Seminar Cr.Hrs.3 (Formerly 035.739) Ph.D. Candidates are expected to complete a grant application form, review and critique current literature, and present a seminar on current research topics. This course is graded pass/fail.

**ANSC 7400** Quantitative Genetics in Animal Science Cr.Hrs.3 (Formerly 035.740) A study of advanced techniques used in animal breeding research, their theoretical basis, analysis and interpretation. Case studies in the student's area of interest will be examined. Prerequisite ANSC 7220 (or 035.722) or its equivalent.

**ANSC 7440** Protein Nutrition and Metabolism Cr.Hrs.1.5 (Formerly 035.744) Lectures and critical reviews will be used to discuss recent/significant research advances in the fields of protein nutrition and metabolism, pertinent to mammalian physiology. Also offered as HNSC 7440 by the Department of Human Nutritional Sciences. Not to be held with the former 035.735. Offered in 2007-2008 and alternate years thereafter.



**ANSC 7450** Energy and Carbohydrate Nutrition and Metabolism Cr.Hrs.1.5  
(Formerly 035.745) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of energy/carbohydrate nutrition and metabolism, pertinent to mammalian physiology. Also offered as HNSC 7450 by the Department of Human Nutritional Sciences. Not to be held with the former 035.717. Offered in 2007-2008 and alternate years thereafter.

**ANSC 7460** Lipid Nutrition and Metabolism Cr.Hrs.1.5  
(Formerly 035.746) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of lipid nutrition and metabolism, pertinent to mammalian physiology. Also offered as HNSC 7460 by the Department of Human Nutritional Sciences. Offered in 2006-2007 and alternate years thereafter.

**ANSC 7470** Vitamin Nutrition and Metabolism Cr.Hrs.1.5  
(Formerly 035.747) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of vitamin nutrition and metabolism, pertinent to mammalian physiology. Also offered as HNSC 7470 by the Department of Human Nutritional Sciences. Not to be held with the former 035.734. Offered in 2006-2007 and alternate years thereafter.

**ANSC 7480** Mineral and Trace Element Nutrition and Metabolism Cr.Hrs.1.5  
(Formerly 035.748) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of mineral nutrition and metabolism, pertinent to mammalian physiology. Also offered as HNSC 7480 by the Department of Human Nutritional Sciences. Not to be held with the former 035.734. Offered in 2006-2007 and alternate years thereafter.

**ANSC 7490** Phytochemical Nutrition and Metabolism Cr.Hrs.1.5  
(Formerly 035.749) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of phytochemical nutrition and metabolism, pertinent to mammalian physiology. Also offered as HNSC 7490 by the Department of Human Nutritional Sciences. Offered in 2007-2008 and alternate years thereafter.

**ANSC 7500** Methodology in Agricultural and Food Sciences Cr.Hrs.3  
(Formerly 035.750) The application of experimental techniques and procedures to agricultural and food sciences research. Recording, processing, interpretation, and critical appraisal of experimental data.

**ANSC 7510** Special Topics in Animal Nutrition Cr.Hrs.3  
(Formerly 035.751) Students will be required to investigate and report on a nutrition problem in a species other than that of their thesis research. Projects may be avian, bovine, ovine, swine or laboratory animal species.

**ANSC 7520** Special Topics in Animal Improvement Cr.Hrs.3  
(Formerly 035.752) Assigned readings, papers and discussions specific problems in animal genetics. Analysis of original data may be required.

**ANSC 7530** Special Topics in Animal Physiology Cr.Hrs.3  
(Formerly 035.753) Students will investigate a minor research problem in an area of physiology other than that in

which the major is being taken. Problems areas may include: digestion, environment, renal function or reproduction.

**ANSC 7540** Advanced Applied Animal Nutrition Cr.Hrs.3  
(Formerly 035.754) An advanced study of the theoretical and applied aspects of monogastric and ruminant nutrition. A laboratory component will provide training in current techniques in feed analyses and computer modeling. Offered in 2005-2006 and alternate years thereafter.

**ANSC 7550** Special Topics in Animal Behaviour and Welfare Cr.Hrs.3  
(Formerly 035.755) Assigned readings, papers and discussions on specific issues in animal behaviour. A short behavioural experiment may be required.

**ANSC 7560** Mathematical Modeling of Agricultural Systems Cr.Hrs.3  
Lectures and computer based laboratory exercises will be used to discuss various aspects of model development focusing on mechanistic (compartmental analysis), growth functions and an introduction to linear programming. Construction of a simulation model may be required. Not to be held with ANSC. 4240 Mathematical Modeling of Biological Systems. Prerequisite: MATH 1500 or MATH 1520

## Anthropology

**Head:** Susan E. Frohlick

**Campus Address/General Office:** 435 Fletcher Argue Bldg.

**Telephone:** (204) 474 9361

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**Email Address:** [um-anthro@cc.umanitoba.ca](mailto:um-anthro@cc.umanitoba.ca)

**Website:** [www.umanitoba.ca/faculties/arts/departments/anthropology/](http://www.umanitoba.ca/faculties/arts/departments/anthropology/)

The department offers programs leading to the Master of Arts and the Doctor of Philosophy degrees. There are 40-50 graduate students in the department.

Graduates work in universities and colleges as professors or specialists, in the Foreign Service, in health related institutions, in museums, in education, in government heritage positions, for the International Development Research Centre, and in counselling for Native municipal boards. Others have chosen to be free-lance anthropologists; some have incorporated their own successful companies.

### Fields of Research

The department's research focus, and consequent graduate training and undergraduate teaching emphasis, lies in the following:

**Sociocultural Anthropology:** Culture and political economy, cultural production, ecology, migration, global political economy, gender and development, symbolic anthropology, media, tourism, kinship, nationalism, education, youth culture, conflict, sexuality, and applied



anthropology. Aboriginal Canada, Canada, India, South America, West Africa, China, Eastern Europe and the former Soviet Union.

**Archaeology:** Theory, analytic methods, environmental archaeology, zooarchaeology, lithics, settlement patterns, domestication, hunter/fisher/gatherers, historic and fur trade archaeology. Western and Northern Canada, Eastern Europe, South Africa, Near East.

**Biological Anthropology:** Skeletal biology, medical anthropology, demography, palaeodemography, historical epidemiology, palaeopathology, growth and development, infectious disease, reproductive behaviour, 3D imaging, gender and health, colonialism and health.

#### Research Facilities

The Department of Anthropology is located in the Arts Faculty Complex. Laboratory facilities for archaeology and physical anthropology, the C. Thomas Shay Archaeobotanical Collection and the Bioanthropology Digital Image Analysis Laboratory, housed in the Duff Roblin Building, permit advanced study and research. Computer facilities are housed in the department and the Anthropology Laboratory. The University Library system has a collection of anthropological material, including the Human Relations Area Files. The department has a specialized publication series (UMAP). Faculty and students also use the Provincial Archives, the Hudson's Bay Company Archives, and the Manitoba Museum.

#### M.A. in Anthropology , Admission

In addition to the minimum admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, an advanced (four year) degree in Anthropology is the normal preparation for the M.A. program. Students with a different background will normally take a year of pre-M.A. studies consisting of up to 18 hours of courses from the undergraduate, and especially the Advanced, curriculum.

#### Admission Deadlines

Canadian/U.S. and international students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 9 months prior to their intended start date.

#### Program Requirements

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, students must complete a minimum number of 18 credit hours of graduate coursework, including at least 12 credit hours of Anthropology courses at the 700/7000 level. Finally students must submit an acceptable thesis and pass a thesis oral examination.

Second Language Reading Requirement: None

Expected Time to Graduate: 2 Years

#### Ph.D. in Anthropology, Admission

All requirements for the M.A. degree must be completed. Preference will be given to applicants who have demonstrated independent research competence at the Master of Arts level.

#### Admission Deadlines

Canadian/U.S. and international students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 9 months prior to their intended start date.

#### Program Requirements

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, students must complete 18 credit hours above the M.A. level, including at least 15 credit hours of Anthropology courses at the 700/7000 level.

Second language requirement: yes

Expected time to graduation: 4 years

**ANTH 7040** Seminar in Ethnography of Power Systems Cr.Hrs.3  
(Formerly 076.704) Comparative study of a particular theme or problem in political anthropology.

**ANTH 7050** Seminar in the Anthropology of Religion Cr.Hrs.3  
(Formerly 076.705) An intensive analysis of religion as a cultural subsystem, dealing comparatively with ideologies, rituals, and ceremonies and the various anthropological theories put forward to explain religious behaviour.

**ANTH 7070** Seminar in the Anthropology of Illness Cr.Hrs.3  
(Formerly 076.707) Selected topics in the study of cultural factors involved in health/illness, with emphasis upon a particular cultural system. As the course content will vary from year to year, students may take this course more than once for credit.

**ANTH 7130** Cultural Ecology Cr.Hrs.3  
(Formerly 076.713) An examination of the systematic nature of culture and its interrelationships with natural environmental factors.

**ANTH 7140** Ethnographic Research Methods Cr.Hrs.3  
(Formerly 076.714) Approaches and techniques in field research.



**ANTH 7350** Prehistoric Human Ecology Cr.Hrs.3  
(Formerly 076.735) Data and techniques involved in the reconstruction of past environments, with special emphasis on the influences of environment on prehistoric cultural development.

**ANTH 7380** Archaeological Laboratory Techniques Cr.Hrs.3  
(Formerly 076.738) Laboratory techniques for analysis and presentation of archaeological data.

**ANTH 7400** Seminar in the Archaeology of a Selected Area Cr.Hrs.3  
(Formerly 076.740) An intensive survey of the archaeology of a major region or culture area of the world. Content will vary according to the interests of the instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**ANTH 7410** Seminar in Selected Topics in Archaeology Cr.Hrs.3  
(Formerly 076.741) The seminars will consist of an intensive examination of major methodological, analytical and interpretive issues in current archaeological research. Content will vary according to the interests of the instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**ANTH 7430** Archaeological Interpretive Methods Cr.Hrs.3  
(Formerly 076.743) This course is an intensive seminar on major methodological issues in archaeological analysis and interpretation.

**ANTH 7440** Archaeological Theory Cr.Hrs.3  
(Formerly 076.744) Archaeological theory as seen from historical and contemporary perspectives.

**ANTH 7450** Cultural Resource Management Cr.Hrs.3  
(Formerly 076.745) An intensive examination of archaeological cultural resource management. Emphasis will be placed on current Canadian CRM issues and on practical applications of concepts and methods.

**ANTH 7460** Advanced Faunal Analysis in Archaeology Cr.Hrs.3  
(Formerly 076.746) The course will cover the major theoretical, methodological, and practical issues in the analysis of archaeological faunal remains. Topics are addressed through lectures, demonstrations, and laboratory exercises. Prerequisite: ANTH 3990 (or 076.399) or written consent of instructor.

**ANTH 7630** History of Anthropological Theory Cr.Hrs.3  
(Formerly 076.763) A broad overview of the history of anthropological theory and method from the 18th century to World War II. Focus on British and American developments in the context of the rise of industrialization and imperialism.

**ANTH 7640** Contemporary Anthropological Theory Cr.Hrs.3  
(Formerly 076.764) Investigation, comparison and evaluation of contemporary approaches to culture theory in the areas of symbolism, social organization and ecology.

**ANTH 7650** Applied Anthropology Cr.Hrs.3  
(Formerly 076.765) Investigation of major case studies, research methodologies, intervention strategies, and substantive areas of application in applied anthropology. Topical emphases such as economic development, health

care delivery, resettlement schemes, will reflect the interests of the instructor.

**ANTH 7720** Seminar in Human Adaptability Cr.Hrs.3  
(Formerly 076.772) An intensive study of human population biology in diverse environments inhabited by human populations. Emphasis on selected examples of cultural adaptability as a specifically human mechanism for dissipating stress on the biological system.

**ANTH 7790** Advanced Topics in Human Skeletal Biology Cr.Hrs.3  
(Formerly 076.779) Analysis of metric and nonmetric morphological skeletal variation in human populations, with emphasis on the cultural and physical environment. Exemplary problems are drawn from the literature as well as from current research.

**ANTH 7830** Social Organization Cr.Hrs.3  
(Formerly 076.783) Selected theories of social organization in cross cultural perspective. Subject matter may include kinship, age grading, territorial groupings, social stratification or ethnicity.

**ANTH 7900** Problems in Ethnological Research Cr.Hrs.3  
(Formerly 076.790) Problems in ethnological research. As the course content will vary from year to year, students may take this course more than once for credit.

**ANTH 7930** Special Problems in Human Biology Cr.Hrs.3  
(Formerly 076.793) Special problems in Human Biology. As the course content will vary from year to year, students may take this course more than once for credit.

**ANTH 7940** Graduate Reading and Research 1 Cr.Hrs.3  
(Formerly 076.794) Reading and research. As the course content will vary from year to year, students may take this course more than once for credit.

**ANTH 7950** Graduate Reading and Research 2 Cr.Hrs.3  
(Formerly 076.795) Reading and research. As the course content will vary from year to year, students may take this course more than once for credit.

## Applied Health Sciences

**Program Director:** Dr. A. Elizabeth Ready

**Campus Address/General Office:** Health, Leisure and Human Performance Research Institute, 307 Max Bell

**Telephone:** (204) 474-7493

**Fax:** (204) 261-4802

**Email Address:** [ahs\\_phd@umanitoba.ca](mailto:ahs_phd@umanitoba.ca)

**Website:**

[umanitoba.ca/graduate\\_studies/programs/phd/app\\_hlth\\_sci/](http://umanitoba.ca/graduate_studies/programs/phd/app_hlth_sci/)

**Academic Staff:** Please refer to Faculty at [umanitoba.ca/graduate\\_studies/programs/phd/app\\_hlth\\_sci/](http://umanitoba.ca/graduate_studies/programs/phd/app_hlth_sci/)

This program is a multi-unit, research-based PhD in Applied Health Sciences. The four participating academic units are: Human Ecology, Kinesiology and Recreation Management, Nursing, and Medical Rehabilitation. The program offered is a unique and timely PhD program, which includes the



treatment and discussion at a graduate level of applied health science as a multi-dimensional entity, while at the same time allows for individualized high-quality health science research with an individual researcher, or small group of researchers. The program combines the strengths of the in-depth discipline specific learning needed to prepare PhD graduates, with the benefits of collaborative learning with students and faculty in other disciplines. In particular, knowledge commonly used by several disciplines can be explored and critiqued as sources of theoretical and practical knowledge. The participation of faculty and students from several disciplines in the exploration and use of knowledge will enhance students' capacity for critical appraisal of the sources and uses of knowledge.

### Admission

Applicants must meet the University of Manitoba Graduate Studies general regulations for admission.

Applicants must possess a research-based Master's degree in a discipline or profession consistent with Applied Health Sciences. Applications from other disciplines will be considered on a case-by-case basis.

Prior to admission to the PhD program, the applicant will be required to specify his/her area of research interest, and to have corresponded with an eligible PhD advisor(s) (member of the Faculty of Graduate Studies), who is (are) a faculty member (primary appointment) in one of the four participating units, and who is (are) willing to accept them into the program.

Elements taken into consideration in determining the acceptance of the applicant into the program: grade-point average in Master's courses, previous courses taken, specific research interest of the applicant, student's rationale for choosing to apply to this program as opposed to a uni-discipline degree, current profile of students in the program, research funding and facilities availability through the proposed advisor(s) for the proposed research, and financial support for the applicant.

No admission tests are required for this program.

### Application Procedures

Applications (and all required documentation) must be submitted directly to the Faculty of Graduate Studies, University of Manitoba, 500 University Centre, Winnipeg, MB R3T 2N2.

A completed application will include:

(a) a completed Faculty of Graduate Studies official application for admission form, together with the application fee and supporting documentation.

(b) a list of academic awards, publications and/or any research or other relevant experience.

(c) at least two letters of recommendation, including one from the student's intended PhD advisor, attesting to the suitability of the candidate for PhD studies in this program, and agreeing to accept them should they be admitted into the program; and one from the student's Master's degree advisor. One additional letter of recommendation may also be appended.

(d) a statement explaining the student's rationale for choosing to apply to this program.

In addition: a Supervisor Data form is to be completed by the intended PhD advisor providing information such as grant support, supervisory record, publication record, etc. This form should be submitted directly to the AHS PhD Program. To obtain a copy of the form, please contact the AHS program at [ahs\\_phd@umanitoba.ca](mailto:ahs_phd@umanitoba.ca).

It is the applicant's responsibility to ensure that all required documentation is received by the department in advance of the deadline.

Incomplete applications will not be considered.

### Application Deadlines

Applications (Canadian/US/International) will be accepted up to and including February 1 of each year. Applications will normally be accepted for the regular session only (September start-date). Applications for a January start-date will be considered on a case-by-case basis.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar.

The course-work requirement will consist of a minimum of twelve credits of 7000-level course-work consisting of at least three credits from any two of the four partners (6 credits).

Students will also be required to take the course "AHS 7000: Research and Practice in Applied Health Sciences", a lecture/seminar course in which faculty members from the four academic partners will participate (3 credits). Regular attendance is expected of all students.

The remaining three credit hours can be chosen from a combination of graduate courses from the four partners or from other faculties outside the four participating Faculties/Schools that offer graduate courses related to applied health sciences (3 credits).

Students in the program will also be required to take part in a monthly seminar in Applied Health Sciences with mandatory attendance for two years (Year 1: AHS 7002 Seminar I in Applied Health Sciences; Year 2: AHS 7004 Seminar II in Applied Health Sciences), a requirement for graduation. Students will also be required to take part in yearly research-



related activities (poster day, oral presentation day, etc.) involving student presentations. The monthly seminars will consist of an admixture of presenters from the University of Manitoba and from outside, with the focus on applied health science issues. Poster and oral presentations will involve directed research projects, research proposals, and applied health sciences issues.

An Advisory Committee will be established for each student within three months of registration into the PhD program. The Advisory Committee will consist of a minimum of three professors (members of the Faculty of Graduate Studies) and will include the thesis advisor(s), at least one professor from one of the four partner units other than the unit of the principal advisor, and one professor external to the four partner units. The principal advisor's primary appointment must be in one of the four partner units.

Students will be expected to complete a candidacy exam, consisting of an oral and written component, normally before the end of the second year of their program. The student must pass the written and oral phases of the exam to be considered a candidate for the PhD degree. Students must have completed all coursework prior to taking the candidacy exam.

The student's thesis research proposal must be approved by the Advisory Committee normally before the end of the second year after admission to the program. The research proposal, in the form of a document outlining the rationale and background for the study, specific objectives, and methods and procedures will be presented by the candidate in an oral format. Following the oral presentation, the candidate will defend their proposal.

The research program, culminating in the preparation and defense of a doctoral thesis, will be conducted according to the regulations of the Faculty of Graduate Studies of the University of Manitoba.

Second language reading requirement: None

Expected time to graduation: Four years

**AHS 7000** Research and Practice in Applied Health Sciences Cr.Hrs.3

The objective is to promote in students advanced knowledge, skills, and abilities needed to evaluate and conduct multidisciplinary, applied health research. This course is theoretical in nature and will require a high level of independence and participation by students.

**AHS 7002** Seminar I Applied Health Sciences Cr.Hrs.0

A monthly interdisciplinary seminar on current issues in applied health sciences, involving presentation by students, faculty, and invited speakers from inside and outside the University of Manitoba. Attendance and participation are required for AHS students during the first year of their doctoral program.

**AHS 7004** Seminar II Applied Health Sciences Cr.Hrs.0

A monthly interdisciplinary seminar on current issues in

applied health sciences, involving presentation by students, faculty, and invited speakers from inside and outside the University of Manitoba. Attendance and participation are required for AHS students during the second year of their doctoral program.

## Architecture

For information regarding programs offered by the following units:

[City Planning](#)

[Design and Planning Ph.D.](#)

[Interior Design](#)

[Landscape Architecture](#)

Please click on the links above.

## Architecture

**Head:** (and Graduate Chair) TBA

**Campus Address/General Office:** 201 Russell Building

**Telephone:** (204) 474 8195

**Fax:** (204) 474 7532

**Email Address:** [architecture@umanitoba.ca](mailto:architecture@umanitoba.ca)

**Website:** [umanitoba.ca/architecture/](http://umanitoba.ca/architecture/)

**Academic Staff:** Please see website for Faculty information: [umanitoba.ca/architecture/](http://umanitoba.ca/architecture/)

### Architecture Graduate Program Information (M.Arch)

#### Application Deadline

January 15 for all Canadian/US and International applicants.

September admissions only.

#### Introduction

Architecture deals with a complex intertwining of artistic, social, cultural and practical concerns. The M.Arch. program provides students with the opportunity to learn the tools to synthesize these issues and develop the conceptual, practical and formal skills to take command of the subject. Much of the study is research based with an emphasis on structured learning through finding out, rather than prescriptive instruction. The program offers a diverse range of research areas and offers a choice of studios and seminars for M.Arch. students. All of our highly motivated professors are engaged in active research and/or practice.



Rather than having an emphasis on either the conceptual or practical side of architecture, our program concentrates on the relationship between the two, with many studios undertaking various forms of critical making as part of their teaching. Many of the studios run study trips abroad.

The department offers a lively environment to study the subject with diverse studios, history and theory seminars as well as innovative and engaging technology courses. An international array of lecturers augments the internal lecture program. The series combines world famous architects, artists and designers with emerging young talents. The Faculty of Architecture also runs an exceptional exhibition program.

### Program Information

**There are different ways to become eligible to apply for the M.Arch Program.**

#### 1. Direct Entry

All applicants must meet the general admission and entrance requirements of the Faculty of Graduate Studies. The entry level into the program will be determined by the Department of Architecture Admission Committee's evaluation of the individual's application and supporting documents. Direct admissions to the M.Arch program requires that applicants have a minimum of an honours four-year undergraduate degree in one of the following: Architecture, Architectural Design, Architectural Science, Environmental Design/Architecture option, or the equivalent, from a recognized college or university, with minimum GPA of 3.0 or equivalent B in the last two full years (60 credit hours) of study.

For those applying with a University of Manitoba Bachelor of Environmental Design degree a minimum of "C+" in courses [EVAR 4002](#), [EVAR 4004](#), [EVAR 4008](#), [EVAR 4010](#) with a minimum GPA of 3.0 in the last two full years (60 credit hours) of study is required.

Please refer to the following web page for more information:

[http://www.umanitoba.ca/faculties/architecture/media/AR\\_2010sep27\\_MastersAdmissionGuidelines.pdf](http://www.umanitoba.ca/faculties/architecture/media/AR_2010sep27_MastersAdmissionGuidelines.pdf)[http://www.umanitoba.ca/faculties/architecture/programs/architecture/admissions\\_package.html](http://www.umanitoba.ca/faculties/architecture/programs/architecture/admissions_package.html)

#### 2. Architecture Master's Preparation (AMP 1 & AMP 2) Undergraduate Program

For applicants who have a recognized three or four year undergraduate degree in either a non-design discipline (such as Fine Art, Engineering, Science, Philosophy, Theatre, Psychology, Music, Film, English, History, Art History, Urban Studies, Geography, Commerce, etc)

OR

a design-related discipline (such as Interior Design, Landscape Architecture, Industrial Design, etc.) and wish to eventually apply to the M.Arch Program.

**General Eligibility:** All applicants must meet the general admission and entrance requirements set by Environmental Design:Architecture. The entry level into the program will be determined by the Department of Architecture Admissions Committee's evaluation of the individual's application and supporting documents.

**NOTE:** Upon successful completion of the AMP Program students wishing to continue into the M.Arch Program must officially apply for graduate admission. Evaluation is based on the student's progress in the AMP Program, as evidenced in a portfolio submission, GPA and a Faculty of Graduate Studies application.

**Please refer to the following for AMP Information and Application Package:**

[http://www.umanitoba.ca/faculties/architecture/media/AR\\_2010sep27\\_AMP\\_AppPkgInfoBulletin.pdf](http://www.umanitoba.ca/faculties/architecture/media/AR_2010sep27_AMP_AppPkgInfoBulletin.pdf)

#### Research Facility

The Centre for Architectural Structures and Technology is an architectural research laboratory that embraces both the poetic and technical dimensions of architectural design. The work of C.A.S.T. seeks new boundaries for creative thought, design, and building technology. We do this work through physical explorations of materials, tools and building methods, the study of natural law, and the free play of imagination.

<http://umanitoba.ca/faculties/architecture/cast/>

#### Ph.D.

A Ph.D. in Design and Planning is offered.

<http://umanitoba.ca/faculties/architecture/programs/Phd/index.html>

#### Accreditation

Our graduate program received a full six-year accreditation in 2009.

In Canada, all provincial associations recommend a degree from an accredited professional degree program as a prerequisite for licensure. The Canadian Architectural Certification Board (CACB), the sole agency authorized to accredit Canadian professional degree programs in architecture, recognizes two types of accredited degrees: the Bachelor of Architecture and the Master of Architecture. A program may be granted a six-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards. Master degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree,



which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

**ARCH 7000** Advanced Technology Topics I Cr.Hrs.1.5

One five-week seminar and/or project-based topics offering in-depth study of advanced building systems, technology, and methods. Options are grounded in faculty research and build upon foundation technology courses. Some topics may be deemed mandatory at the department's discretion. Topics may be taken in the fall and/or winter terms.

**ARCH 7010** Advanced Technology Topics 2 Cr.Hrs.1.5

One five-week seminar and/or project-based topics offering in-depth study of advanced building systems, technology, and methods. Options are grounded in faculty research and build upon foundation technology courses. Some topics may be deemed mandatory at the department's discretion. Topics may be taken in the fall and/or winter terms.

**ARCH 7020** Research Topics: History and Theory

1 Cr.Hrs.1.5

One five-week lecture, seminar and/or project-based topics offering an in-depth study of an historical and/or theoretical subject. Options are grounded in faculty research and build upon foundation history/theory courses. Some topics may be deemed mandatory at the department's discretion. Topics may be taken in the fall and/or winter terms.

**ARCH 7030** Research Topics: History and Theory

2 Cr.Hrs.1.5

One five-week lecture, seminar and/or project-based topics offering an in-depth study of an historical and/or theoretical subject. Options are grounded in faculty research and build upon foundation history/theory courses. Some topics may be deemed mandatory at the department's discretion. Topics may be taken in the fall and/or winter terms.

**ARCH 7040** Professional Practice Cr.Hrs.3

Is concerned with the duties and responsibilities of an architectural practice; its divisions, office organization and administration, in Manitoba and Canada. The lectures relate in scope and standard to current models of practice and their requirements, including issues of building economics and construction cost control.

**ARCH 7050** Arch Studio 5 and Comprehensive Program Report Cr.Hrs.9

Develop design explorations and seek to clarify relations between architectural criteria and the urban/natural environments in national or international contexts. Conceptual, programmatic, material, technological, economic, and political principles and systems employed are to be evident in the Comp. Prog Report.

**ARCH 7060** Arch Studio 6 Cr.Hrs.9

The previous term's investigations are further developed into a comprehensive architectural design proposal. The thorough integration of design and programming criteria, with building and environmental systems and assemblies are examined.

**ARCH 7070** Design Research Studio Cr.Hrs.9

This final design studio involves concerted research and design explorations of an individually defined subject of

inquiry, within a selected studio thematic focus. These investigations are intended to prepare students for their final Design Thesis.

**ARCH 7080** Technology Thesis Report Cr.Hrs.3

Technology Thesis Report is an advanced project-based course done in conjunction with the Design Thesis project. The report is related to an individual student's design thesis topic, focusing on specific aspects of technology and applied tech. research. Advisor supervision and external engineering consultancy or agreed equivalent are required.

**ARCH 7350** Legal Aspects of Architectural Practice Cr.Hrs.3

(Formerly 050.735) discusses the importance of the knowledge of law as it relates to professional practice of architecture, including a discussion of the historical development of legal responsibilities of a practicing professional generally and of architects specifically. There is also discussion of trends in the development of professional responsibility and liability.

## Biochemistry and Medical Genetics

**Head:** Dr. L. Simard

**Campus Address/General Office:** 336 Basic Medical Sciences Building, 745 Bannatyne, Winnipeg, MB, R3E 0J9

**Telephone:** (204) 789 3593

**Fax:** (204) 789 3900

**Email Address:** [bmg@umanitoba.ca](mailto:bmg@umanitoba.ca)

**Website:** <http://umanitoba.ca/medicine/biochem/>

**Graduate Student Assistant:** Mrs. T. Sarkar

**Academic Staff:** Please refer to the department website for Faculty

info: <http://umanitoba.ca/faculties/medicine/units/biochem/faculty/facultylists.html#amara>

The Department of Biochemistry and Medical Genetics is the result of a merger of the Department of Human Genetics and the Department of Biochemistry and Molecular Biology in June 1999.

### Fields of Research

Work undertaken by faculty members and their trainees is frequently multidisciplinary and crosses many pillars of health research including basic and clinical sciences and population health. Various aspects of the molecular and biochemical basis of Alzheimer's disease, breast cancer, cancer biology, lysosomal storage diseases, cystic fibrosis, diabetes, neuromuscular and cardiovascular diseases are being investigated. Model systems are being created in mouse, *C. elegans*, and *S. cerevisiae*. Areas of research include development, signal transduction, steroid hormone receptor action, chromatin structure, transcription and gene regulation, biosynthesis and transport of membrane proteins, membrane lipid metabolism, arachidonate metabolism.



Other areas of research include dysmorphology, the molecular basis of genetic disease, prenatal diagnosis and screening, as well as community genetics. For specifics, please click on our [Faculty info](#) page.

### Research facilities

The administrative office and some faculty are housed on the 3rd floor (24,000 square feet) of the Basic Medical Sciences Building located at the Bannatyne Campus of the University. Research resources include preparative and ultracentrifuges, visible and ultraviolet spectrophotometers, spectrofluorometers, luminometers, liquid and gamma scintillation spectrophotometers, high pressure liquid chromatography, radiochromatogram scanners, instruments for gas, liquid, paper and thin-layer chromatography and electrophoresis, phosphorimagers and a variety of modern instruments for molecular biology. The department is well-equipped with bacteria/cell/tissue culture facilities and coldrooms and has access to state-of-the-art transgenic mouse modeling facilities.

### Biochemistry & Medical Genetics

#### Pre-M.Sc. in Biochemistry and Medical Genetics

**Admission Requirements:** A minimum three-year bachelor's degree with a 3.5 GPA (4.5 scale), or equivalent, in the previous 60 credit hours of university study, or equivalent (normally 2 years). In addition, during this period there should be no grade less than C+ in any biochemistry, genetics, or life science course deemed relevant to the proposed course of study.

**Program Structure:** The Pre-Master's program is designed to bring the standing of the student to the level of that of an Honours B.Sc., with an adequate background in biochemistry and/or genetics. Pre-Master's students are required to take up to 30 credit hours of course work, depending on the type of degree previously obtained and their prior courses. The course work to be undertaken (3000 and 4000 level courses) will be determined by a provisional advisory committee, headed by the Chair of the Graduate Student Affairs Committee.

Pre-Master's students are not required to do a graduate research project and will not receive a stipend.

#### Qualification for Admission to the Master's

**Program:** A Pre-Master's student must attain a grade point average of 3.5 or better, with no grades below a C+. Upon completion of the course work, the student may then apply for admission to the Master's program in the Department of Biochemistry and Medical Genetics.

#### M.Sc. in Biochemistry and Medical Genetics Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

### Entrance Requirements

The applicant must have an appropriate background in biochemistry, genetics, or a closely related subject area, with a minimum 3.5 GPA (4.5 scale), or equivalent, in the previous 60 credit hours of university study, or equivalent (normally 2 years). In addition, during this period there should be no grade less than C+ in any biochemistry, genetics, or life science course deemed relevant to the proposed course of study.

Admission will depend upon the availability of a Faculty Member to supervise the student and resources to support the student's research.

In rare cases, applicants with GPA's lower than 3.5 may be admitted to this department, based upon individual circumstances and the support of their prospective advisors. Students in this situation should consult with their prospective advisor and the Chair of the Graduate Student Admissions Committee.

### Program Requirements

Program Requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

Second language reading requirement: none

Expected time to graduate: 2 – 3 years

#### Ph.D. in Biochemistry and Medical Genetics Admission

A thesis-based Master's degree (of at least 2 years in duration), or equivalent, in biochemistry, genetics, or a closely related field, from a Canadian university is required for direct admission to the Ph.D. program. In addition, a cumulative GPA of 3.5 (4.5 scale), or equivalent, no grade less than C+ in the courses taken during the Master's program is required.

Generally, there is no direct entry into the Ph.D. program for students with Master's degrees from non-Canadian universities. Applications will be assessed by the admissions committee on an individual basis; in most cases students with Master's degrees from international universities are admitted into the Master's program in this department. They may subsequently request for a transfer into the Ph.D. program, if eligible.

**Admission will also depend upon the availability and willingness of a Faculty Member to supervise the student and resources to support the student's research**

### Program Requirements



Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

Second language requirement: none

Expected time to graduation: 4 – 5 years

Direct entry from the Bachelor's degree to the Ph.D. degree in this department would only occur in exceptional circumstances. Prospective students would be expected to have extensive research experience, in addition to an outstanding academic background, to be considered for this route. Once admitted, these students must complete at least 18 credit hours of course work in addition to their thesis research.

#### Transfer to a Ph.D. program:

Students registered for a Master's degree who has made excellent progress over the first ~20 months in their program may be considered for transfer to the Ph.D. program. The transfer process, as outlined in the BMG Graduate Student Academic Guide, must be completed within 24 months of the student's commencement in the Master's program.

Such transfer will be considered only when:

1. Both the student and the advisor request, in writing, that the student transfers to the Ph.D. program. This request should be made to the Chair of the Graduate Student Affairs Committee.
2. At least 12 credit hours of course work, exclusive of the mandatory 'Research Seminar' course, have been successfully completed (GPA >3.5).
3. The student is able to demonstrate a high potential for success in the Ph.D. program. This will be shown by their research and course work accomplishments to date, as well as their ability to communicate and defend their findings and future plans in both a written and an oral format, as outlined in the BMG Graduate Student Academic Guide.

The Transfer to Ph.D. examining committee will consist of the student's advisory committee and the Chair of the Graduate Student Affairs Committee, or his/her designate, as Chair.

A student can request transfer from the Master's to the Ph.D. program only once. Students who do not transfer may apply to the Ph.D. program after completing their Master's program.

**NOTE:** Admissions are considered on a case-by-case basis by the Graduate Student Admissions Committee and are based upon transcripts, English proficiency (if required), letters of recommendation, and evidence that the applicant's Master's program was thesis based. Prospective students must have a thesis advisor before they will be considered for admission to the department.

## Biochemistry and Medical Genetics -7000 Level

**BGEN 7000** Research Seminar M.Sc. Cr.Hrs.1

Consists of presentations of the student's current research. For Masters students only.

**BGEN 7020** Proteins Cr. Hrs.3

(Formerly 137.702) Three hours per week, one term. Purification, bioinformatics, characterization, expression, structure, folding and engineering of proteins.

**BGEN 7030** Enzymology Cr.Hrs.3

(Formerly 137.703) Two hours per week, one term. Kinetics and mechanisms of action of enzymes.

**BGEN 7040** Seminars in Human Genetics Cr.Hrs.3

(Formerly 137.704) Current research topics in human genetics. A term paper and oral presentation will be required of each student.

**BGEN 7070** Special Topics in Human Genetics Cr.Hrs.3

(Formerly 137.707) An assignment, tutorial and discussions course taken only through consultation with the head of the department. The topics will vary depending upon students' needs and interests, and may include specialized topics not available in regular course offerings.

**BGEN 7090** Principles and Practice of Human Genetics Cr.Hrs.3

(Formerly 137.709) Lectures, tutorials and assignments designed to review major topics in human genetics and give practical experience in the analysis and interpretation of human genetics data and critical review of published work.

**BGEN 7120** Laboratory Methods in Human and Medical Genetics Cr.Hrs.3

(Formerly 137.712) A seminar and assignment course covering an outline of the methods currently in use in human and medical genetic diagnostic and research laboratories. The principles of cell culture, cytogenetic, molecular and biochemical genetic techniques that are used in the diagnosis of human genetic disease and the study of human variation will be reviewed. Students will undertake a practical assignment and write a report. Prerequisite: 125.709 or consent of instructor.

**BGEN 7130** Genetic Epidemiology of Human Populations Cr.Hrs.3

(Formerly 137.713) Lectures, tutorials and assignments to evaluate the etiology, distribution and control of disease in groups of relatives and inherited causes of disease in population. Prerequisite: 125.709 or consent of instructor.

**BGEN 7140** Clinical Genetics Cr.Hrs.3

(Formerly 137.714) Focus is on clinical application and principles of single gene, multifactorial and teratogenic causes of disease. Students will learn by use of reading assignments, tutorials, computer-assisted diagnostic tools and first hand experience in genetics clinics. Major term paper required. One term. Prerequisite: 125.709 or consent of instructor.



**BGEN 7160** Theory and Practice of Genetic Counselling Cr.Hrs.3  
(Formerly 137.716) Review of general theoretical and practical aspects of genetic counselling. Students will be instructed in interviewing techniques. Case presentations will be reviewed and opportunities to observe and partake in genetic counselling will be provided. Term paper.  
Prerequisite: 125.709 or consent of instructor.

**BGEN 7180** Clinical and Molecular Cytogenetics Cr.Hrs.3  
(Formerly 137.718) Cytogenetic methodology; chromosome architecture; karyotype interpretation; indications for referral; chromosome syndromes and anomalies; prenatal diagnosis; chromosomal basis of oncogenesis; flow cytometry; immunogenetics; fluorescent in situ hybridization; the application of molecular technology to chromosome analysis.  
Prerequisite: 125.709 or consent of instructor.

**BGEN 7200** Topics in Biochemistry 1 Cr.Hrs.3  
(Formerly 137.720) Advanced study and reading on two topics chosen by the course director in consultation with the student's supervisor. Topics include but are not limited to Neurochemistry, Lipids, Carbohydrates, Biomembranes, Inborn Errors, Cytoskeleton Proteins.

**BGEN 7210** Topics in Biochemistry 2 Cr.Hrs.3  
(Formerly 137.721) Advanced study and reading on two topics chosen by the course director in consultation with the student's supervisor. Topics include but are not limited to Neurochemistry, Lipids, Carbohydrates, Biomembranes, Inborn Errors, Cytoskeleton Proteins.

**BGEN 7250** Gene Expression Cr.Hrs.3  
(Formerly 137.725) Three hours per week, one term. Chromatin structure. Structure and function of sequence-specified DNA-binding proteins. Control of transcription.

**BGEN 7260** Cellular and Molecular Biochemistry Cr.Hrs.3  
(Formerly 137.726) Three hours per week, one term. Recent research advances on the study of cellular components, assembly and organization of plasma membrane components, cell signalling, and cell cycle.

## Biochemistry and Medical Genetics -8000 Level

**BGEN 8000** Research Seminar Ph.D. Cr.Hrs.1  
Consists of presentations of the student's current research. For Ph.D. students only.

## Biological Sciences

**Head:** J.E. Anderson

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The department offers graduate training leading to Master of Science (M.Sc.) and Doctor of Philosophy (Ph.D.) degrees in a broad range of biological disciplines in both field and laboratory research. Programs in the biological sciences represent a unique concentration of expertise in whole-organisms, and a wide range of research in ecological, environmental, evolutionary, physiological, cellular and molecular sciences.

Expertise in the major plant, animal, and fungal groups in grassland and boreal forest ecosystems are represented in the department: cell and developmental biology, biotechnology, molecular biology and genetics, ecology and conservation biology, vascular and nonvascular plants, fungal and algal biology, physiology, systematics, evolutionary and coevolutionary biology, animal modelling, aquatic biology and aquatic organisms, fisheries, behavioural ecology, parasitology, and muscle biology.

Graduates are equipped to embark on a career in botany, zoology and related fields, including environmental science, natural resource management, agriculture and forestry, fisheries and wildlife management, and biomedical sciences. Former students are successfully employed in research, teaching or administrative positions in academic, industrial or governmental settings, as biological consultants and in biomedical agencies in Canada and around the world.

The department is able to foster an informal atmosphere with good interaction between faculty and graduate students. Students are often successful in Commonwealth, NSERC, CIHR, Faculty of Science, and University of Manitoba Graduate Fellowship and Scholarship competitions.

### Fields of Research

#### Ecology, Evolution and Fisheries:

Fleet dynamics, fisheries management, fish population dynamics, interaction between behaviour and population processes; emphasis on quantitative analysis, mathematical and simulation modelling based upon historical data and field work when appropriate.

Wetland foodweb structure and dynamics, invertebrate grazer-algal interactions; Cladocera ecology, palaeoecology of communities in the littoral zone of lakes, systematics and evolution.

Collaborative multi-species, multi-scale ecosystem examination of search strategies of seabirds for fish; spawning habitat selection by a keystone forage fish.

Molecular systematics, biogeography, and conservation genetics of fish (particularly lampreys and salmonids) and other aquatic organisms (microsporean parasites and dreissenid mussels).

Circumpolar Aboriginal peoples and their domestic economies, hunting and trapping, land use, land claims, and impacts of northern development on their lifestyles.



Evolution of hemoglobin oxygen affinity in mammals in relation to exploitation of aquatic, northern, and subterranean habitats; molecular evolution of beta-globin gene cluster in eutherian mammals; mammalian molecular phylogenetics.

Ecosystem structure and function in freshwater wetlands: ecophysiology and ecotoxicology of benthic and planktonic algae, and aquatic macrophytes; paleolimnology.

Fungal ecology in aquatic and terrestrial ecosystems: saprotrophs and nutrient release, fungi in forest ecosystems.

Economic botany: native plant products and special (non-timber) forest products, and the role of fungal secondary compounds in nature.

Conservation ecology: habitat fragmentation, plant dispersal, effects of disturbance on biodiversity, ecological knowledge and ecosystem management, restoration of plant communities.

Evolutionary biology of plants and fungi: pollination biology, plant-plant interactions and plant-fungal interactions, co-evolution, phylogeny and molecular evolution.

Systematics: molecular, morphological, and phylogeographic studies of flowering plants, conifers, ferns and allies, bryophytes, algae, and fungi.

Applied and theoretical population and community ecology of forest and grassland ecosystems: mathematical and statistical ecology, ecological modelling.

#### **Behavioural Ecology:**

Comparative and experimental studies addressing factors that contribute to the evolution and maintenance of sociality, and the roles that communication and cognitive abilities play in social species (particularly ground-dwelling squirrels and slave-making ants).

Behavioural and evolutionary interactions between the parasitic cowbirds and their passerine hosts. Cowbird selection of host nests; host quality; nest defence/defense; host tolerance of parasitism; nest placement; consequences of parasitism.

#### **Physiology:**

Metabolic, thermal and respiratory physiology of moles and shrews.

Thermal biology, diving physiology and bioenergetics of northern semiaquatic mammals, mainly muskrat and beaver; physiological problems encountered during swimming and diving in cold water; seasonal bioenergetics and nutritional studies of these species.

Endocrine regulation of salt and water balance in fish, particularly the physiological actions of the rennin-angiotensin system, natriuretic peptides and neurohypophysial peptides on cardiovascular, renal and extra-renal function.

Stress physiology in forest ecosystems: plant adaptation to salts, pollutants and anthropogenic disturbance (mining, forestry).

Neurophysiology; regulation of ion channel proteins and electrical activity in neurons of the mammalian central nervous system; neurobiological control of food intake.

Transport physiology; mechanisms of osmoregulatory NaCl transports (salt and water balance) and nitrogen excretion in invertebrates and lower vertebrates; physiologic and molecular responses to ammonia stress.

#### **Parasitology:**

Comparative immunology of fish and mammals, particularly mucosal immunity. Host-parasite interactions, including transmission of fish parasites and the role of host immune responses in protection and regulation of parasite populations.

Host-parasite relationships of metazoan parasites of invertebrates. Life history strategies of free-living triclad flatworms. Zoogeography and community ecology of Unionidae.

#### **Cell and Developmental Biology:**

Oogenesis, early development and cell differentiation in invertebrates. Origin and fate of germ cells. Cellular mechanisms that regulate oogenesis and the establishment of polarity.

The roles of the cytoskeleton, bioelectrical properties and ions in oogenesis and development using an array of microscopical and electrophysiological techniques.

Early development in zebrafish, specifically the genes and gene interactions involved in early developmental decision-making processes. Genetic control of vertebrate (mainly zebrafish) embryonic development. Gap junction mediated intercellular communication: structure and post-translational modifications of the constituent connexin proteins, the role of specific connexins in the embryonic development of zebrafish, control of connexin gene expression.

Cellular mechanisms directing the formation of tissues and organs, using molecular, cellular, morphological and physiological techniques.

Molecular genetic control of reproduction in insects, with emphasis on mosquitoes; molecular basis of sex determination and sexual differentiation in invertebrates.



Role of RNA interference and microRNAs in regulating gene expression and development. Role of transposable elements as sources of genetic variation and mutation.

Cellular mechanisms directing the normal and pathological physiology of muscular dystrophy and age-related atrophy, muscle satellite cell activation, and impact of disease and regeneration on tissue and animal structure and function including testing of potential treatment modalities, using molecular, cellular, biochemical, morphological, and functional assays.

Plant biotechnology: applied bioremediation, genetic signaling and development, molecular techniques and ecology, plant structural imaging and analysis, proteomics, systematics and genomics, ultrastructural microscopy and microtechniques.

Developmental anatomy and cytology of plant reproductive systems: cytochemistry and ultrastructure

#### Research facilities

The Department has facilities in the Buller Building, the Duff Roblin Building, and a new "Biological Sciences Building" which was the former Pharmacy Building, on the Fort Garry Campus including an extensive, modern, nationally and internationally recognized herbarium collection (WIN) consisting of a vascular plant collection and a cryptogamic collection. The Department also has special facilities for animal sciences research including a large animal colony for small terrestrial and aquatic animals. Both animal housing and plant growth facilities are operated by trained technical staff with experience and expertise to support research and teaching.

Facilities include greenhouses and growth chambers; a scanning-transmission electron microscope; plant tissue, fungal and algal culturing facilities; research areas fully equipped for study of plant development, ecophysiology and plant interactions; modern instrumentation for molecular, genetics and evolutionary biology studies; interference, fluorescence and transmission electron microscopes; tissue culture; cellular biology investigations; patch-clamping facilities; digital image analysis equipment; quantitative biology; and ecological analysis computerized facilities.

Field station facilities are provided at the Delta Marsh Field Station which provides year-round research facilities and accommodation for biological research in the 17,000 hectare Delta Marsh on the southern shore of Lake Manitoba. Other field station facilities are available to faculty members and their graduate students at Star Lake (Whiteshell Provincial Park), the Experimental Lakes Area (NW Ontario) and the Churchill Northern Studies Centre. The location of the facilities permits work on a variety of prairie, marsh and woodland habitats and on a wide spectrum of inland lakes and rivers, as well as Arctic tundra and marine habitat along the coast of Hudson Bay. The University Field Station, fully equipped with living accommodations and laboratory space, is 80 km away at Delta Marsh on the south shore of Lake Manitoba. Additional field studies are conducted from the Experimental Lakes Area near Kenora, Ontario, in

conjunction with the Freshwater Institute, Winnipeg. Broad collaborations with other scientists within and external to the University of Manitoba further enrich the access to training facilities for faculty and graduate students.

#### M.Sc. Biological Sciences, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. If a student applies with a three-year general B.Sc. degree or equivalent, a pre-Master's program must be taken which will be individually prescribed. Students with a four-year major or honours degree apply for direct entry into the M.Sc. program. If a student applies with a three-year general B.Sc. degree or equivalent, additional courses and/or a pre-Master's program must be taken to be equivalent to the required four-year degree. Application Deadlines: Applications must be received in the Faculty of Graduate Studies by the following dates.

**Session Start Date Canadian/US International Regular**  
September June 1 March 1 Winter January October 1 July 1  
Spring May February 1 November 1 Summer July April 1  
January 1

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The program requires completion of a research thesis and course work consisting of a minimum of one core course and one additional BIOL 7000 course. Study and research will extend to a minimum of twelve months. All students must submit a research-based thesis and defend it orally. Please see the department website for supplementary regulations for each of the former departments and for those of the new department the Department of Biological Sciences.

Second language reading requirement: none

Expected time to graduate: two years

#### Ph.D. Biological Sciences, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Candidates normally have completed a M.Sc. degree before entering the Ph.D. program; however under certain circumstances transfer from a M.Sc. to Ph.D. program and entry into the Ph.D. without a M.Sc. is possible. Individual qualifications other than these will be considered.

Applications must be received in the Faculty of Graduate Studies by the following dates:



**Session Start Date Canadian/US International Regular**  
September June 1 March 1 Winter January October 1 July  
1 Spring May February 1 November 1 Summer July April 1  
January 1

### Program Requirements

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Please see the department website for supplementary regulations for each of the former departments and for those of the new department Department of Biological Sciences.

Second language requirement: none

Expected time to graduation: three four years

#### **BIOL 7100** Core Skills in Biological Sciences Research Cr.Hrs.3

Learning skills for a career in scientific research in Biological Sciences including: using the scientific method, applying for NSERC funding, maintaining a CV, abstract writing, ethics in research, research protocols and biosafety and biohazards, statistical designs and their assumptions, literature searching, critical thinking, critiquing the scientific literature, making teaching and research presentations. Not to be held with Methodology of Research ANAT 7090.

**BIOL 7140** Advanced Physiology Cr.Hrs.6  
(Formerly ZOO 7140, 022.714) A in-depth study of topics related to how changing internal and external environments influence life sustaining physiological processes. Topics include plant and animal stress, endocrine & electrophysiology, metabolism and molecular biology of solute transport.

**BIOL 7142** Advanced Physiology Cr.Hrs.3  
An in-depth study of topics selected from physiological research of the department including plant, animal, stress physiology, ecophysiology, electrophysiology, endocrine or neurophysiology and others. Topics will be focused on the research area of each student to acquire specialized knowledge in a particular topic.

**BIOL 7202** Evolutionary Biology Cr.Hrs.3  
An in-depth study of topics selected from research interests within the department that may cover an evolutionary theme. This course will allow students to acquire or expand on specialized knowledge in a particular evolutionary topic through a series of readings or a combination of readings and lectures.

**BIOL 7220** Critical Thinking in Biological Sciences Cr.Hrs.3  
A core graduate level course within the Ph.D. program designed to stimulate discussion and thought in key areas applicable to the student's research discipline.

**BIOL 7240** Wetland Ecology Cr.Hrs.6  
(Formerly BOTN 7240, 001.724) A study of marsh, bog, and fen communities, with emphasis on their history, soil-plant relationships, and species distribution. Field work at the University Field Station (Delta Marsh) and nearby bog and

fen sites will be an integral part of the course.

**BIOL 7250** Advanced Evolution and Systematics Cr.Hrs.3  
This course will first consider theoretical and practical aspects of systematics, and then consider how systematic and population-level studies have illuminated our understanding of evolutionary processes.

**BIOL 7302** Environmental Biology and Ecology Cr.Hrs.3  
An in-depth study of topics selected from environment and ecology interests of the department, including population ecology, fisheries biology, plant/animal interactions, animal behaviour, ecosystem dynamics and restoration. Topics will be chosen to acquire specialized knowledge in a particular topic.

**BIOL 7352** Aquatic Biology Cr.Hrs.3  
An in-depth study of topics covering all aspects of aquatic biological interests in the department including wetland ecology, limnology, oceanography, toxicology, conservation, and others. Topics will focus on the research interests of students so they may acquire specialized knowledge in particular areas.

**BIOL 7360** Problems in Biological Statistics Cr.Hrs.3  
(Formerly ZOO 7360, 022.736) The course discusses statistical problems and techniques which specifically apply to biological research. Laboratory exercises will be based primarily on examples from field research. Prerequisite: STAT 3130 (or 005.313 or 005.333) or the consent of the instructor.

**BIOL 7370** Special Topics in Algal Ecology Cr.Hrs.6  
(Formerly BOTN 7370, 001.737) Directed study and project(s) in selected aspects of the ecology of freshwater phytoplankton, periphyton and metaphyton.

**BIOL 7440** Methods and Approaches to the Analysis of Biological Data Part 1 Cr.Hrs.3  
(Formerly BOTN 7440, 001.744) Methods for handling biological data arising from field surveys; planning and undertaking biological studies. Theory of experimental design, vegetation sampling, multivariate analysis, techniques of remote sensing, spatial analysis and modeling. Offered in alternate years.

**BIOL 7450** Methods and Approaches to the Analysis of Biological Data Part 2 Cr.Hrs.3  
(Formerly BOTN 7450, 001.745) Analysis of complex biological data sets arising from field surveys, vegetation sampling and remote sensing using techniques from Part 1 (BIOL 7440 or BOTN 7440). Offered in alternate years.

**BIOL 7502** Cell and Developmental Biology Cr.Hrs.3  
An advanced topics course which will be an in-depth study of current research topics in cellular and developmental biology. An undergraduate background in cell and developmental biology or related areas is required.

**BIOL 7530** Molecular Biology Techniques for Eukaryotes Cr.Hrs.3  
A techniques-intensive course focusing on the understanding of molecular biology techniques, troubleshooting problems, writing reproducible Materials and Methods for publications, accurate recording of procedures in lab journals, and bioinformatics exercises. Not to be held



with the former 001.742 or 001.746 or BOTN 7460.

**BIOL 7540** Methods for Analysing Biological Data Cr.Hrs.3  
A survey of methods and approaches for analysing biological data containing many variables, suitable for graduate students. Offered in alternate years. Not to be held with BIOL 4312 or the former BOTN 7440 or BOTN 4650.

**BIOL 7580** Topics in Plant Pathology Cr.Hrs.3  
(Formerly BOTN 7380, 001.738) Current and specialized aspects of plant pathology studied through lectures, seminars, prescribed readings and laboratory projects. Offered in alternate years. Prerequisite: BIOL 4250 or the former BOTN 4210 or 001.421 or equivalent, or consent of department head.

**BIOL 7590** Pathology of Trees and Shrubs Cr.Hrs.3  
(Formerly BOTN 7390, 001.739) Lectures, seminars and readings focussing on special problems relating to the pathology of woody plants. Emphasis on ornamental shrub, shade tree, and forest tree species of local importance. Offered in alternate years. Prerequisite: BIOL 4250 or the former BOTN 4210 or 001.421 or equivalent, or consent of department head.

**BIOL 7600** Topics in Biological Sciences Cr.Hrs.3  
A general topics course to reflect an in-depth study of current interest topics to extend or acquire specialized knowledge in a particular area of biological interest. A subtitle may be added to the current title to reflect specialized interests.

**BIOL 7602** Directed Studies in Biological Sciences Cr.Hrs.3  
A course to provide a broad knowledge of different topics within Biological Sciences peripheral to the specific topic of the student's thesis and will not become the introductory chapter of the thesis. Students will complete assignments by themselves but will participate and be evaluated as a group.

**BIOL 7880** Ecology Project Course Cr.Hrs.3  
(Formerly BOTN 7880, 001.788, ZOOL 7880, 022.788) This course provides experience in the organization and execution of team research into current ecological issues. Teams consist of a graduate student team leader, 3-6 undergraduates, and a faculty advisor. Each project team identifies a specific research question, creates a proposal for answering it, and presents their results in a public forum.

## Biosystems Engineering

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(Engineering Building)

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**Academic Staff:** Please refer to Faculty website: [umanitoba.ca/faculties/engineering/departments/biosystems/](http://umanitoba.ca/faculties/engineering/departments/biosystems/)

The Department of Biosystems Engineering offers graduate programs leading to M.Sc., M.Eng., and Ph.D. degrees. The

graduate programs in the department focus on applications of engineering in biological systems. Strong emphasis is placed on assisting graduate students to gain a broad range of skills and experience in conducting interdisciplinary research, in understanding the interrelationships among physical and biological factors, and in written and oral communication.

### Fields of Research

**Environmental Engineering:** Environmental impact assessments of agricultural and food production; biological reduction of wastewater; membrane bioreactor technology; management and utilization of agricultural and food processing wastes; management of livestock manure; biofiltration; environmental odours; protection and remediation of contaminated soil and groundwater; site preparation and selection.

**Bio-Processing:** Infrared processing of food; superheated steam drying; extraction technologies for complex oil/juice crops; modified atmosphere storage of meat, fruits, and vegetables; fast freezing of fruits; mathematical modelling of food systems; physical, thermal, and rheological properties of foods; water activities of foods; shelf-life, flow of bulk solids; bulk properties of grains and powders.

**Biofuels:** bioengineering for biofuels; bioreactors; anaerobic digestion of waste for biogas.

**Biosensors:** bioengineering of methods to detect and monitor biological materials (nucleic acids, proteins, lipids) and/or microorganisms (viruses, bacteria).

**Post-Harvest Preservation of Grains:** Grain storing and drying systems; computer simulation of stored-grain ecosystems; physical methods of controlling insects and micro-organisms; machine vision for automated handling and classification of grain; properties of grains and oilseeds; expert systems for managing stored products.

**Bio-Imaging:** Computer analysis of images for grading, orientation, and automation; near-infrared (NIR) spectroscopy; development and application of neural networks.

**Power and Machinery:** Harvesting and processing of new crops such as hemp; precision agriculture; guidance systems for agricultural machinery; ergonomics of agricultural machinery; assistive technologies for farmers with disabilities; tillage and seeding; soil-machine interaction; equipment for manure handling.

**Soil and Water Engineering:** Irrigation and drainage systems; flow and contaminant transport in porous media; soil-plant-water relations.

**Light-Frame Structures:** Structural aspects of light-frame buildings; use of wood and other structural materials; bulk solids storage structures (bins and silos).



Bio-Environment: Animal production environment; plant growth environment; energy conservation in animal and plant production; environments in buildings designed for biological processes.

### Research Facilities

**Alternative Village:** The Alternative Village is an outdoor laboratory that is dedicated to research, testing, and training related to alternative energy technologies and building envelope systems. The centerpiece of the Alternative Village is the Straw-Bale Building, however, there are numerous other small structures including a greenhouse with a heat storage wall. Other equipment includes: universal testing machines; loading frames for structural testing of wood beams, columns, and trusses.

**Agricultural Ergonomics Lab:** The Agricultural Ergonomics Lab has been developed to research the ergonomic and safety issues associated with agricultural machines. The lab includes: faceLAB eye-tracking system; tractor-driving simulator; pto entanglement test apparatus; sound level meter.

**Biofuels, Biotechnology and Fermentation Lab:** The research activity within this lab is dedicated to the production of biofuels (ethanol, biodiesel, hydrogen) using various sources of biomass. Current research focuses on understanding genetics of bacteria in order to develop strategies to increase biofuel production. Research equipment includes: bioreactors; ion chromatography system; gas chromatograph, gel electrophoresis apparatus; quantitative PCR system; centrifuges; electroporation equipment.

**Bioprocessing Engineering Lab:** Processing and drying of food using superheated steam has several advantages over conventional hot-air drying. Mathematical modeling and computer simulation are used to predict and compare the performance of various systems. The lab includes: superheated steam processing drier; texture analyzer; supercritical fluid extraction system; instron machine; satake milling unit; colorimeter, scanning differential calorimeter; aspirator.

**Computational Optimization and Geometric Modeling Lab:** Computational methods are used to research topics related to biomedical/biological imaging, pattern recognition, spectroscopy, and hyperspectral imaging. The lab includes: Fourier transformed infrared (mid IR) microscope with ATR imaging; chemometric analysis software; finite element modeling (ABACUS).

**Grain Storage Research Lab:** The Canadian Wheat Board Centre for Grain Storage Research is a 1400 m<sup>2</sup> state-of-the-art laboratory dedicated to research on grain storage and handling. The facility includes: machine vision equipment; a soft x-ray unit; near-ambient, high temperature, infrared and microwave driers; a fan-testing unit; instrumentation for measuring loads in grain storage structures; equipment to measure physical, thermal, biological, and quality characteristics of grain and oilseeds; thermal disinfection

systems; environmental chambers; grain handling and cleaning equipment; and several grain bins.

**Imaging and Food Quality Assessment Lab:** Research conducted in this lab focuses on providing safe and healthy food to humans and livestock. The lab includes: Raman microscope; near-mid infrared hyperspectral imaging system; IR microscope; soxtex fat extractor.

**Odour Research Lab:** The Odour Research Lab is used to quantify and analyze odour samples, and to evaluate various odour-reduction technologies. Equipment available in the lab includes: olfactometer; electronic nose; Jerome meter; air sampling devices.

**Soil Dynamics & Machinery Lab:** The Soil Dynamics & Machinery Lab is used to research soil-tool-material interactions associated with tillage machines and processing of agricultural fibres. The lab includes: soil bin; particle flow software.

**Soil & Water Engineering Lab:** The Soil and Water Engineering Lab is dedicated to the areas of irrigation, drainage, remediation of contaminated soils and groundwater, and instrumentation for soil and water monitoring. The lab includes: Rhizotron for measuring water and nutrient status within the root zone; permeameters; suction cup lysimeters; electrical conductivity meters; electromagnetic field survey instruments; water flow and level sensors; TDR and miniprobos.

**Waste Management Lab:** The Waste Management Lab is dedicated to research involving livestock waste and municipal wastewater, including movement of nutrients within the environment. The lab includes: pilot-scale portable membrane bioreactor; three complete fermentation systems; water waste sample analysis capacity. A pilot-scale anaerobic digestion facility is located at the Glenlea Research Station.

### M.Sc. in Biosystems Engineering Admission

For admission into the M.Sc. program, applicants are normally required to hold a Bachelor's degree in Biosystems Engineering or equivalent from a recognized university. Applicants with degrees in related areas may be recommended for admission by the Department Head.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

### Program Requirements



The M.Sc. is a research degree consisting of coursework and a thesis based on original research conducted by the student. A minimum of 18 credit hours of coursework is required, which must include BIOE 7290. At least an additional 3 credit hours must be taken from the Department of Biosystems Engineering at the 7000 level with the balance at the 3000 level or above from any department.

Master of Science students are required to spend at least one academic session in full-time resident graduate study. On recommendation of the department head, the residence requirement may be waived in special cases.

Second language reading requirement: none

Expected time to graduate: 18-24 months

### **M.Eng. in Biosystems Engineering Admission**

For admission into the M.Eng. program, applicants must have a minimum of a Bachelor's degree in engineering. In exceptional cases, based on the candidate's professional experience, this requirement may be waived on the recommendation of the Department Head.

### **Application Deadlines**

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

### **Program Requirements**

The M.Eng. is a course-based degree consisting of coursework and an engineering project. A minimum of 24 credit hours of coursework is required, which must include BIOE 7290, and at least 12 credit hours of 7000-level courses offered by the Faculty of Engineering. An additional 6 credit hours are assigned to completion of GRAD 7050 M.Eng. project and report.

Second language requirement: none

Expected time to graduate: 12-18 months

### **Ph.D. in Biosystems Engineering Admission**

Admission to the Ph.D. program normally requires a M.Sc. degree in any area of Engineering, although applicants with degrees in related areas may be recommended for admission by the Department Head. Ultimately, acceptance must be approved by the Faculty of Graduate Studies. Students making exceptional progress while enrolled in the

M.Sc. program may request to transfer to the Ph.D. program upon the consent of the department head and based on a recommendation from the student's advisory committee and the Biosystems Engineering Graduate Studies Committee which investigates the student's qualifications and suitability for Ph.D. study. In such cases, the program credit hour requirements shall be recommended at the time of transfer by the student's advisory committee.

### **Application Deadlines**

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

### **Program Requirements**

Students are normally required to take a seminar course (BIOE 7270) and expected to meet a requirement in teaching and learning in post-secondary education. The remaining 9 credit hours at the 7000 level can be taken from any Department. The teaching and learning requirement may be met by: completing the CHET program; or completing the teaching workshops in Teaching Techniques, and Course Construction and Organization (15 h each) plus other teaching workshops of at least 15 h duration; or completing teaching workshops of 45 h duration. The advisory committee must approve the process which will be followed by the student to meet the teaching and learning requirement.

Second language requirement: none

Expected time to graduate: 3 - 4 years

### **BIOE 7040 Fluid Mechanics of Unsaturated Porous Solids Cr.Hrs.3**

(Formerly 034.704) Statics and dynamics of two immiscible fluid phases occupying the voids of porous solids. Concepts include capillary pressure, bubbling pressure, saturation, intrinsic and relative permeability, pore-size distribution indices. Prerequisite: consent of instructor.

### **BIOE 7110 Grain Storage Cr.Hrs.3**

(Formerly 034.711) A synthesis of major aspects of the storage of grain including: abiotic and biotic characteristics of stored grain bulks, regional variables, grain pressure theories, methods of controlling deterioration, and health hazards. Prerequisite: consent of instructor.

### **BIOE 7140 Advanced Irrigation and Drainage Cr.Hrs.3**

(Formerly 034.714) Selected advanced problems and new developments in irrigation and drainage. Interrelationships between irrigation and drainage and the environment. Prerequisite: consent of instructor.

### **BIOE 7160 Instrumentation and Controls Cr.Hrs.3**

(Formerly 034.716) For the non-engineering student. Transducers, circuits and instruments for measuring and



recording physical quantities such as temperature, humidity, force, pressure, strain, sound, flow and nuclear radiation. Presentation and interpretation of data. Prerequisite: consent of instructor.

**BIOE 7180 Bioprocessing Cr.Hrs.3**

This course allows students with a background in either biological sciences or engineering to gain an understanding of biochemical engineering processes. Topics include production of biofuels, bioplastics, biopharmaceuticals, and processing technologies. This course is also offered in the Department of Microbiology as MBIO 7180. BIOE 7180 is not to be held with MBIO 7180.

**BIOE 7200 Bulk Solids Storage and Handling Cr.Hrs.3**

(Formerly 034.720) Fundamental characteristics of bulk solids, bulk solids flow during storage and handling, loads in bulk solids storage and handling systems, mechanical, pneumatic and hydraulic conveying of bulk solids, safety in storage and handling of bulk solids. Prerequisite: consent of instructor.

**BIOE 7210 Numerical Modelling of Biosystems Cr.Hrs.3**

(Formerly 034.721) Applications of numerical methods to the solution of problems dealing with biological systems: structure analysis, mechanical behaviour of biological materials, moisture sorption and desorption, cooling and heating of biological materials, and flow through saturated and unsaturated porous media. Solution of transient and non-linear problems. Use of commercial finite element packages for problem solving. Prerequisite: consent of instructor.

**BIOE 7220 Advanced Machine Design Analysis for Biosystems Cr.Hrs.3**

(Formerly 034.722) Analysis of machines for use in biosystems with respect to design and functional performance, in-field traction, operator safety and comfort, and energy source, transmission and application. Engineering analyses will be used to study biosystems machinery problems of current and future interest. Prerequisite: consent of instructor.

**BIOE 7230 Advanced Topics on Light-Frame Buildings Cr.Hrs.3**

(Formerly 034.723) Structural and environmental design and analysis of light-frame buildings. Topics include: loads in light-frame buildings; frame design; construction management; environmental control in light-frame buildings; and structure-environment interactions. Prerequisite: consent of instructor.

**BIOE 7240 Special Problems in Biosystems**

Engineering Cr.Hrs.3  
(Formerly 034.724) Advanced work in a specialized field involving engineering applications to biological systems. Prerequisite: consent of instructor.

**BIOE 7250 Mechanical Behavior of Biological Materials Cr.Hrs.3**

(Formerly 034.725) Elastic and inelastic behavior of biological materials under applied load. Emphasis on unprocessed and semi-processed food products. Use of mechanical behavior properties in the design of handling, storage, processing and sensing systems for food products. Prerequisite: consent of instructor.

**BIOE 7260 Research Methods for Biosystems**

Engineers Cr.Hrs.3  
(Formerly 034.726) Introduction to various research methods, including data acquisition and transmission, control systems, dimensional analysis, random signal analysis, experimental design, error analysis, stochastic modelling, fuzzy mathematics and expert systems. Prerequisite: consent of instructor.

**BIOE 7270 Advanced Seminar in Biosystems**

Engineering Cr.Hrs.3  
(Formerly 034.727) A series of seminars to be given by Ph.D. candidates on research topics of current interest in Biosystems Engineering. Prerequisite: consent of instructor.

**BIOE 7280 Advanced Topics in Biosystems**

Engineering Cr.Hrs.3  
(Formerly 034.728) An opportunity to extend, update or acquire specialized knowledge in particular area of interest. Prerequisite: consent of instructor.

**BIOE 7290 Biosystems Engineering Seminar 1 Cr.Hrs.3**

(Formerly 034.729) Oral and written presentation of engineering research is discussed. Students are expected to actively participate in weekly seminars and to present two seminars both orally and written.

**BIOE 7300 Food Process Engineering Cr.Hrs.3**

(Formerly 034.730) Food engineering concepts are presented using quantitative relationships that define the process. Various advanced methods of heating and processing foods are discussed and their mathematical and physical relationships described. Descriptive information of typical equipment assists students in utilizing engineering principles in design. Prerequisite: consent of instructor.

**BIOE 7310 Materials Incorporation into Soil Cr.Hrs.3**

(Formerly 034.731) Types and characteristics of agricultural materials; solid and liquid waste (including manure) incorporation; crop residue incorporations, seed placement; chemical incorporation; methods and equipment; performance evaluation; measurement technique.

**BIOE 7320 Membrane Processes for Water and Waste Treatment Cr.Hrs.3**

(Formerly 034.732) Principles of membrane filtration, classification, design and manufacture. Principle mechanisms of mass transport to the membrane surface and particle/solute rejection. Investigation of membrane bio-fouling and bio-film control strategies. Fundamentals of reverse osmosis, nano-, ultra-, and micro-filtration process design and operation. Practical applications of membranes in the area of water and wastewater treatment. Innovative and novel bio-reactor designs utilizing membrane filtration for environmental reclamation.

## Cancer Control

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The Ph.D. in Cancer Control is offered by the Faculty of Nursing and the Department of Community Health Sciences, Faculty of Medicine. The goal of cancer control is to prevent cancer, cure cancer, and increase survival and quality of life for those who develop cancer, by converting the knowledge gained through research and evaluation into clinical and community interventions. This program addresses the pressing need in Canada for clinical and community health scientists in cancer control.

#### Fields of Research

Cancer care of individuals and families is an area of research excellence in the Faculty of Nursing. Current areas of research include: patient-health professional communication, clinical decision making, symptom management, family care giving, sleep and cancer, and several dimensions of palliative care and cancer prevention. Methodological expertise includes scaling of psychosocial variables and conducting randomized clinical trials of nursing and psychosocial interventions. Previous work has focused on breast, prostate, and lung cancer patients as well as children with cancer.

The cancer control focus in the Faculty of Nursing is complemented by the strong methodological expertise (biostatistics, clinical trials, meta-analysis) of faculty members in the Department of Community Health Sciences, as well as their substantive expertise in the fields of cancer epidemiology, palliative care, aboriginal health, child health and aging. Knowledge translation is a strong emphasis of the program. Significant community partners in delivering this Ph.D. program are the Winnipeg Regional Health Authority, CancerCare Manitoba, and the St. Boniface Hospital Research Foundation. International research partnerships exist with the Mayo Clinic in Rochester, Minnesota; the Karolinska Institute in Stockholm, Sweden; and the University of Manchester, England.

#### Student Funding

A stipend is available on application and acceptance from a multidisciplinary training program in which the Faculty of Nursing is participating: Psychosocial Oncology Research Training (PORT) Program (McGill University) ([www.port.mcgill.ca/indextext.htm](http://www.port.mcgill.ca/indextext.htm)). Students are encouraged to obtain the PORT program details well in advance of application to the Ph.D. in Cancer Control to facilitate funding of their first year of studies. Students are expected to apply for national funding in the form of doctoral studentships/fellowships from the National Cancer Institute of Canada and the Canadian Institutes of Health Research.

#### Ph.D. in Cancer Control Admission

Admission requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar and can be obtained from the Faculty of Nursing.

#### Applicants must possess:

- High academic standing in previous university work;
- A Master's degree in nursing or a health-related discipline. The degree must be thesis-based, although evidence of an extensive publication and research background as an alternative to a thesis is acceptable; and
- An area of research interest in palliative care, cancer care, or cancer prevention which is supported by a Faculty of Nursing or a Department of Community Health Sciences advisor.

#### Application Deadlines

Students in the Faculty of Nursing normally begin their program on 1 September. Applications with complete supporting documentation are due in the Faculty of Graduate Studies by January 15th.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The program normally consists of twenty-one credit hours of coursework (fifteen from required courses, six credit hours from electives), a candidacy examination and a thesis. (In addition, fifteen credit hours of pre- or co-required courses or equivalent must have been completed before entering the program or in the first year).

Second language reading requirement: none

Maximum time to graduate: six years

#### NURS 7030 Foundations, Issues and Trends in Nursing Cr.Hrs.3

(Formerly 049.703) Explores how social forces have influenced the evolution of nursing, its place in society, and the health care system today. Examines issues and trends affecting present and future development of nursing.

#### NURS 7040 Curriculum Development in Nursing Cr.Hrs.3

(Formerly 049.704) The course is designed to explore the developmental phases of curriculum design in a variety of educational settings and types of programs. Students will have the opportunity to engage in the planning and the structuring of educational programs. Course in abeyance.

#### NURS 7050 Restorative Nursing Cr.Hrs.6

(Formerly 049.705) Advanced study of the scientific foundations of human functioning as it applies to individuals and families in the context of altered health status. Nursing theories and therapeutic interventions will be applied to the



restoration of the health status of individuals and families. Practice is an integral part of the course. Offered on a rotating basis.

**NURS 7080** Special Topics in Nursing Research II Cr.Hrs.3 (Formerly 049.708) Seminar discussion of topics related to current issues and problems in the development, implementation, and evaluation of knowledge utilization programs in nursing practice. Required of all practicum students. Offered when student demand warrants and on a rotating basis.

**NURS 7082** Evidence Informed Practice Cr.Hrs.3 This course will provide a foundation for students to evaluate the theory of evidence informed practice and its relationship to health care delivery. Students will be exposed to the principles of evidenced informed practice, basic epidemiological statistics, systematic reviews, critical appraisal techniques, application of implementation science, and health care intervention evaluation in order to acquire the analytical and questioning skills necessary to review their own work and other literature relevant to health care practices. Asking the right clinical question, searching the literature, critically appraising primary studies, making recommendations(s) for changing clinical practice, and evaluation the effects of a practice innovation or newly developed program are essential components of evidenced informed practice.

**NURS 7084** Role development in Advanced Nursing Practice Cr.Hrs.3 The purpose of this course is to understand the role of advanced nursing practice. The context, complexity, and scope of the roles within professional nursing practice will be explored. Particular emphasis will be placed on the knowledge base and skill set required to be an effective leader in a variety of advanced practice nursing roles. In this course, nursing graduate students for all streams will come together to discuss and debate issues related to advanced nursing practice on a local, regional, national and international level.

**NURS 7086** Integrative Focus Cr.Hrs.3 The purpose of this course is to allow the student to focus in-depth in a substantive area of nursing practice: clinical practice, education or administration. Students will engage in practice in the area of focus, and be guided by the faculty adviser with respect to the goals and direction of the practicum and associated readings. Students will participate in seminars facilitate by the faculty at designated times throughout the practicum.

**NURS 7090** Science and Theory in Nursing Cr.Hrs.3 The course includes an exploration of nursing's theoretical evolution. Issues related to the development and application of theory in a practice discipline will be discussed with a focus on the role of research. Particular emphasis will be placed upon analysis and evaluation of nursing's conceptual and theoretical systems.

**NURS 7100** Administration in Nursing Cr.Hrs.6 (Formerly 049.710) Exploration and analysis of the roles and responsibilities of the nursing administrator in today's health care system. Examination of the organizational structure and culture of nursing services in relation to conflict resolution, interdisciplinary relationships and union negotiation. Includes preceptorship experience. Offered on a rotating basis and

currently under review.

**NURS 7110** Readings in Selected Topics Cr.Hrs.3 (Formerly 049.711) An intensive readings course for graduate students in nursing. Topics may be selected within the general field of nursing to suit the special needs and research interests of students, for example, transcultural nursing, women's health, or palliative care. Students must have a faculty member agree to advise them before registering.

**NURS 7140** The Older Adult: Advanced Nursing Assessment Cr.Hrs.3 (Formerly 049.714) Advanced study and practice integrating theory, concepts, research and skills related to nursing assessment of the strengths and vulnerabilities of older adults and their families. Emphasis is on health promotion for the elderly. Clinical practice in the community and/or the institution is a component of the course. Offered on a rotating basis.

**NURS 7150** The Older Adult: Clinical Decision-Making and Intervention in Nursing Cr.Hrs.3 (Formerly 049.715) Emphasis is on advanced study and practice in evaluation of clinical data and subsequent selection of appropriate nursing interventions to promote health of older adults and their families. Development of skills related to consultation and supervision is integral to the course. Clinical practice settings include the community and institutions. Offered on a rotating basis.

**NURS 7160** Cancer Nursing Research Cr.Hrs.3 (Formerly 049.716) Focuses on recent advances in cancer nursing research with an emphasis on research methodologies, ethical concerns, and design issues pertinent to research with cancer populations. Approaches to utilization of research findings in clinical practice will be addressed. Offered on a rotating basis.

**NURS 7170** Community Health Nursing: Assessment of Aggregate Needs Cr.Hrs.3 (Formerly 049.717) Furthers theoretical and practical knowledge of key components of community health nursing within the primary health care model. Focus is on community health nursing systems and their relationship to the total health care system. Factors influencing past, current, and future community health nursing practice are examined. Emphasis is on assessing aggregate needs and developing advanced skills in working with a target group in the community. Practice in the community is an integral part of the course. Offered on a rotating basis.

**NURS 7180** Community Health Nursing: Community Level Interventions Cr.Hrs.3 (Formerly 049.718) Furthers theoretical and practical knowledge in community wide interventions that promote health. Focus is on the community health nurse's role in program development and evaluation for targeted groups in the community, and the role of influencing health policy through lobby efforts. Practice in the community is an integral part of the course. Prerequisite: NURS 7170 (or 049.717) or permission of instructor. Offered on a rotating basis.

**NURS 7200** Human Responses to Illness Cr.Hrs.6 (Formerly 049.720) Consists of a series of seminars, case studies and clinical practica on human responses common



to ill individuals across the lifespan. The emphasis of the course is on synthesis and application of relevant principles of the Human Response to Illness Model, on the development of proficiency in advanced assessment and decision-making, and on initiating, planning and evaluation of nursing interventions. Clinical practice is a course component. Offered on a rotating basis.

**NURS 7210** Qualitative Research Methods in Nursing Cr.Hrs.3

The purpose of this course is to advance knowledge of qualitative methodology and understanding of the ways in which qualitative methodology can be used to understand phenomena of interest in nursing and health care. This course is designed to provide opportunities for developing specific qualitative research skills, while gaining familiarity with theories, issues, and challenges in qualitative research. Students are exposed to the philosophical assumptions of the qualitative paradigm, ethical issues specific to qualitative research, qualitative sampling strategies, qualitative data collection techniques, and processes associated with the analysis, interpretation, and knowledge translation and utilization of qualitative data.

**NURS 7220** Quantitative Research Methods in Nursing Cr.Hrs.3

The purpose of this course is to advance understanding of the ways in which quantitative approaches can be applied to solve nursing problems. The quantitative research process will be described including literature review, conceptual frameworks in nursing sampling, data collection strategies, analysis of research data, and communication of results. Included are exploration of the status and development on nursing knowledge through quantitative research methods.

**NURS 7250** Foundations of Advanced Practice Nursing Cr.Hrs.3

(Formerly 049.725) A study of the theoretical underpinnings surrounding the development of a variety of advanced practice nursing roles. The focus will be on the issues shaping role development in Manitoba and Canada including economic, political and sociologic factors determining health care policy and delivery will be examined.

**NURS 7260** Health Care in Advanced Practice Nursing 1 Cr.Hrs.6

An examination of the assessment and intervention strategies for individuals from birth to adolescence, including sexuality and reproductive health. Designed to provide the necessary knowledge and experience to assist individuals and their families with the most common health problems. Concepts of health promotion and health maintenance are integrated throughout the course. Integrated clinical practicum (12 hrs/week). Prerequisites: NURS 7250 (or 049.725), NURS 7370, NURS 7380 and NURS 7390.

**NURS 7270** Health Care in Advanced Practice Nursing 2 Cr.Hrs.6

(Formerly 049.727) A study of assessment and intervention strategies for individuals from young adult through older adult. The course is designed to provide the necessary knowledge and experience to assist individuals and their families with the most common health problems. Concepts of health promotion and health maintenance are integrated throughout the course. Integrated clinical practicum (12 hrs/week). Prerequisites: PHAC 2100 (or 089.210), PHGY 7240 (or 090.724), 036.725, NURS 7230 (or 049.723),

NURS 7250 (or 049.725).

**NURS 7280** Applied Physiology and Pathophysiology for Nurses Cr.Hrs.6

(Formerly 049.728) This is a clinically-applicable systems approach to normal and altered physiological regulation, and is of specific application to advanced nursing practice. Lectures in physiology and pathophysiology as well as student-led case studies will be used to provide synthesis and application of concepts to common health care problems seen in clinical practice.

**NURS 7290** Woman, Child and Family Health: Nursing Perspectives Cr.Hrs.6

(Formerly 049.729) Detailed study of the theory, concepts, current research and nursing care related to the health needs of women, children and their families. Students will focus their theoretical learning and clinical practice within selected areas of woman, child or family health. Clinical management of selected clients is an integral part of the course. Offered in 2003 and alternate years thereafter.

**NURS 7300** Advanced Health Assessment and Diagnostic Reasoning Cr.Hrs.6

Designed to develop health assessment and critical thinking skills appropriate for clinical practice at an advanced level. The collection and in-depth analysis of subjective and objective health information and the use of diagnostic reasoning are emphasized. All students engage in practice with fellow students, clinical teaching associates and consenting patients. Required for students in the APN major.

**NURS 7310** Health Care Policy: Implications for Nursing Practice Cr.Hrs.3

(Formerly 049.731) Examines the inter-relationships of knowledge development, research utilization, policy formation, health services decision-making, and nursing systems. The selected topics are based on current nursing practice issues in community and institutional settings and their impact in individuals, families and aggregates. A major focus is the analysis of the process of knowledge development and application to health care and nursing systems. Not to be held with the former 049.719 and or NURS 7240 (or 049.724).

**NURS 7320** Philosophy of Nursing Science Cr.Hrs.3

(Formerly 049.732) Advanced seminar to explore philosophies of science which have influenced the development of nursing knowledge. Nursing epistemological traditions are analysed and criticized as they relate to nursing theory development and research. The relationship between nursing science and practice is emphasized.

**NURS 7330** Clinical Consolidation Cr.Hrs.0

Provides an opportunity to consolidate clinical skills, apply theoretical knowledge and research, and synthesize theory and practice in the final year of the Nurse Practitioner stream (10 weeks of 400 clinical hours). Preparation of a final paper that illustrates scholarly endeavour suitable for publication is required.

**NURS 7340** Evidence Informed Practice Cr.Hrs.3

(Formerly NURS 7080) This course will provide a foundation for students to evaluate the theory of evidence informed practice and its relationship to health care delivery. Students will be exposed to the principles of evidenced informed practice, basic epidemiological statistics, systematic reviews;



critical appraisal techniques, application of implementation science, and health care intervention evaluation in order to acquire the analytical and questioning skills necessary to review their own work and other literature relevant to health care practices.

**NURS 7350** Role Development in Advanced Nursing Practice Cr.Hrs.3

The purpose of this course is to understand the role of advanced nursing practice. The context, complexity, and scope of the roles within professional nursing practice will be explored. Particular emphasis will be placed on the knowledge base and skill set required to be an effective leader in a variety of advanced practice nursing roles. In this course, nursing graduate students from all streams will come together to discuss and debate issues related to advanced nursing practice on a local, regional, national, and international level.

**NURS 7360** Integrative Focus Cr.Hrs.6

The purpose of this course is to allow the student to focus in-depth in a substantive area of nursing practice: clinical practice, education or administration. Students will engage in practice in the area of focus, and be guided by the faculty adviser with respect to the goals and direction of the practicum and associated readings. Students will participate in seminars facilitated by the faculty at designated times throughout the practicum. Prerequisite: NURS 7090, NURS 7210, NURS 7220, and NURS 7340.

**NURS 7370** Pathophysiologic Concepts & Therapeutics I Cr.Hrs.3

Introducing principles of cell signaling, physiological feedback systems, adaptive and non-adaptive cellular responses, receptor-ligand interactions, drug kinetics, dynamics and therapeutics. Pathophysiology and treatment of disorders of immunity and inflammation, including hypersensitivity reactions, will also be covered in this course.

**NURS 7380** Pathophysiologic Concepts & Therapeutics II Cr.Hrs.3

This course entails a systems-based analysis of disease states commonly seen in primary care, including cardiovascular, hematological, respiratory, neurologic and renal disorders and their treatment. Problem- and case-based scenarios will be used to encourage critical thinking and integration of pathophysiologic and management principles.

**NURS 7390** Pathophysiologic Concepts & Therapeutics III Cr.Hrs.3

This covers pathophysiology and management of disorders of the musculoskeletal, gastrointestinal, dermatologic, reproductive and urogenital systems. One module will focus on disorders of the head, eyes, ears, nose and throat. A case study approach to instruction will be used almost exclusively in this course, which culminates in a mock 'grand rounds' presentation.

## Community Health Sciences

**CHSC 7130** Methods in Health Services Research and Evaluation Cr.Hrs.3

(Formerly 093.713) Examines the process of planning and conducting research and evaluation to assess health services with an emphasis on the methods by which a question may

be translated into a testable hypothesis, and the specification of a research plan that will produce results of maximum internal and external validity.

**CHSC 7200** Health and Health Care in Developing Countries Cr.Hrs.3

(Formerly 093.720) The course will focus on the patterns of mortality and morbidity in developing countries and the organization of health care services. Social, cultural, and economic development will be related to health and health services.

**CHSC 7210** Epidemiology of Women's Health Cr.Hrs.3

(Formerly 093.721) This course will deal with problems and concerns particular to women's health. The topics will be approached from an epidemiological perspective but use will be made of materials from health economics, evaluation research, medical sociology and anthropology.

**CHSC 7220** Health and Health Services of Native People Cr.Hrs.3

(Formerly 093.722) This course provides a detailed review of the health status and the determinants of health of Canada's native people.

**CHSC 7270** Epidemiology of Chronic (Non-Cancer) Diseases Cr.Hrs.3

(Formerly 093.727) The objective is to study the natural history of chronic diseases including the distribution of diseases, risk and prognostic factors, rationale and strategies for prevention. The methodological issues concerning the investigation of severe disease are also discussed. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752).

**CHSC 7290** Economic Evaluation of Health Care Cr.Hrs.3

(Formerly 093.729) The objectives of this course are to enable students to understand economic evaluation methodologies (cost-effectiveness, cost-benefit, cost-utility analysis) as applied to health care and to familiarize them with the applied literature on economic evaluation of health care. Prerequisite: permission of instructor.

**CHSC 7300** Health Policy and Planning Cr.Hrs.3

(Formerly 093.730) This course defines health policy and describes the planning and decision-making process. Case studies will be used to illustrate and critique the substance, process and outcome of policy papers that address contemporary policy issues. Prerequisite: permission of instructor.

**CHSC 7310** Epidemiology of Health Care Cr.Hrs.3

(Formerly 093.731) This course will discuss the advantages and disadvantages of using large administrative data bases for research purposes. Substantive topics dealt with include: regional variations in provision and utilization of health care, short- and long-term outcome studies, individual physician behaviour, and technology assessment. Policy implications are considered. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752) or equivalent and permission of instructor.

**CHSC 7320** Organization and Financing of the Canadian Health Care System Cr.Hrs.3

(Formerly 093.732) Students will study the historical development and current structure of the Canadian health care system and relate its development to changes in social



and political factors. The course provides an economic perspective on current policy issues in the organization, financing, and delivery of health care in Canada.

**CHSC 7330** Cultural Perspectives on Illness and Medical Practice Cr.Hrs.3

(Formerly 093.733) The objective of this course is to make students aware of the ways in which disease, illness, and medical practice are socially and culturally mediated. The course will examine cultural influences on the experience and expression of illness and consider the medical practitioner's role in the development and provision of culturally responsive health care. Prerequisite: permission of instructor.

**CHSC 7360** Clinical Trials Cr.Hrs.3

(Formerly 093.736) The Randomized Clinical Trial is the only true experiment in clinical research. This course is intended to give students a detailed knowledge of the design and implementation of RCTs. Students will participate in a qualitative review of RCTs. Prerequisites: a minimum grade of "B" in CHSC 7520 (or 093.752), CHSC 7470 (or 093.747), CHSC 7480 (or 093.748) or equivalents.

**CHSC 7380** Prevention and Health Cr.Hrs.3

(Formerly 093.738) The course will cover frameworks used in -formulating preventive strategies. Topics will include risk factor assessment, screening, health education, legislation, litigation, lifestyle and prevention. Actual case studies will be used. Prerequisite: CHSC 7520 (or 093.752) and CHSC 7530 (or 093.753).

**CHSC 7390** Health Promotion Cr.Hrs.3

(Formerly 093.739) An examination of theories, principles, practices and settings for health promotion. Prerequisite: permission of instructor.

**CHSC 7400** Directed Readings I: In Epidemiologic Methods Cr.Hrs.3

(Formerly 093.740) An opportunity for advanced students to acquire knowledge in a defined and specific area of interest. Prerequisites: permission of instructor and Graduate Program Director.

**CHSC 7410** Directed Readings: II - In Epidemiology Cr.Hrs.3

(Formerly 093.741) An opportunity for advanced students to acquire knowledge in a defined and specific area of interest. Prerequisite: permission of instructor and Graduate Program Director.

**CHSC 7430** Seminars on Advanced Topics: II - In Methods of Health Care Cr.Hrs.3

(Formerly 093.743) Sem-inars dealing with current research issues, emerging methodologies and analytical techniques will be offered for advanced students. Prerequisite: permission of instructor.

**CHSC 7450** Epidemiology of Communicable Diseases Cr.Hrs.3

(Formerly 093.745) Overview of epidemiological principles in communicable disease investigation and prevention and specific issues in controls of certain specific communicable diseases of public health importance in Canada will be introduced. Prerequisite: permission of instructor. Prerequisite: a minimum grade of "B" in CHSC 7520 (or

093.752).

**CHSC 7460** Environmental and Occupational Health Cr.Hrs.3

(Formerly 093.746) The aim of the course is to acquaint the student with the role of the environment (general and specifically working) as the determinant of health. The content of the course will be presented in the form of lectures, seminars, and field visits. Prerequisite: permission of instructor.

**CHSC 7490** Empirical Perspectives on Social Organization and Health Cr.Hrs.3

(Formerly 093.749) This course will focus on a selected review of the epidemiological literature which has integrated social factors in the investigation of the distribution of health and illness in society. The course will review a selection of important empirical studies investigating the roles played by social, psychological and economic status factors in determining health and illness. Emphasis will be placed on identifying the central theoretical and methodological approaches to defining and measuring socioeconomic status in this literature. Prerequisite: permission of instructor.

**CHSC 7510** Current Topics in Community Health Cr.Hrs.3

(Formerly 093.751) Focus on current issues and topics in community health, particularly as they relate to Manitoba and to Canada. Emphasis will be placed on current literature and ongoing research to examine emerging policies and programs within health care and social development. Prerequisite: basic courses in Epidemiology and Statistics. Prerequisites: a minimum grade of "B" in CHSC 7520 (or 093.752) and CHSC 7470 (or 093.747) and CHSC 7320 (or 093.732).

**CHSC 7520** Principles of Epidemiology 1 Cr.Hrs.3

(Formerly 093.752) This course will introduce the basic concepts and methods of epidemiology, including the definition and measurement of health status and health determinants in populations, assessing health risks and inferring causation, and issues in the design and analysis of population health studies.

**CHSC 7530** Principles in Epidemiology II Cr.Hrs.3

(Formerly 093.753) This course follows the Principles of Epidemiology I and discusses the applications of epidemiologic principles in public health practice, including the investigations of epidemics, disease surveillance, clinical applications, evaluation of health programs, and the planning of preventive programs. Students will also receive instruction in microcomputer applications and use of EPI-INFO software for data entry, analysis and presentation. Corequisite: CHSC 7480. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752) and in CHSC 7470 (or 093.747)..

**CHSC 7540** Advanced Epidemiology Cr.Hrs.3

(Formerly 093.754) Advanced epidemiologic research methods focusing on selected epidemiological issues (bias, confounding, matching, etc.). Discussion will be directed to both epidemiological and statistical considerations to find the optimal solution to a research problem. Prerequisites: a minimum grade of "B" in CHSC 7520 (or 093.752), CHSC 7530 (or 093.753), CHSC 7280 (or 093.728).

**CHSC 7550** Observational Epidemiology Cr.Hrs.3

(Formerly 093.755) Intermediate epidemiologic research methods focusing on case-control and cohort studies, with



discussion on issues relating to planning and design, implementation, and data analysis. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752) and CHSC 7530 (or 093.753) and CHSC 7470 (or 093.747) and CHSC 7480 (or 093.748)..

**CHSC 7560** Epidemiology of Cancer Cr.Hrs.3  
(Formerly 093.756) This course introduces the magnitudes, risk factors and prevention strategies of cancer. It focuses on current knowledge related to the etiology of cancer, medical interventions and potential for prevention. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752).

**CHSC 7610** Advanced Topics in Community Health  
1 Cr.Hrs.1.5  
Special advanced research topics in Community Health Sciences.

**CHSC 7620** Advanced Topics in Community Health  
2 Cr.Hrs.1.5  
Special advanced research topics in Community Health Sciences.

**CHSC 7710** Social Aspects of Aging Cr.Hrs.3  
This course is an advanced seminar designed to examine current social issues in aging. The course is organized around selected topics related to aging. Where possible, the Canadian experience will be compared to international trends and diversity will be highlighted. The first section is a review of the field of gerontology, ageism, demographic trends, theoretical perspectives and methods and the second section explores contemporary social issues. This course is a required course for the Graduate Specialization in Aging Certificate.

**CHSC 7720** Health and Aging Cr.Hrs.3  
This course is an advanced seminar designed to examine health and health care issues in aging. Where possible, the Canadian (or Manitoban) experience will be highlighted. Key topics in the health domain will be covered, such as frailty, mental health, and dementia. The provision of care for older adults will also be covered, focusing on both the formal care system, as well as informal care providers. This course is a requirement for the Graduate Specialization in Aging.

**CHSC 7730** Topics in Health Services Research Cr.Hrs.3  
This course will expose students to select health services research topics that are particularly relevant in Manitoba and Canada. Students are expected to actively engage in seminars led by health services researchers and decision-makers, and also provide informative presentations in their own area of research. Students will also gain knowledge about various communication and knowledge translation strategies.

**CHSC 7740** Advanced Qualitative Methods Cr.Hrs.3  
The purpose of this course is to provide students with fundamental aspects related to qualitative research methods and analysis. By the end of the course, students should have an understanding of the principles and practices involved in: the application of different social theories to qualitative methods; designing a qualitative research study; various ways of collecting qualitative data and analyzing written texts; ways of integrating qualitative methods in a mixed methods design; developing different products for knowledge exchange activities; and 'hands-on' experience in doing

qualitative analysis using qualitative software.

**CHSC 7810** Biostatistics for the Health and Human Sciences  
1 Cr.Hrs.3  
An introduction to statistical ideas and techniques for health sciences and human research. Describing data, patterns in data, the Normal distribution. Principles of estimation and principles of hypothesis testing. Principles and practice of the major statistical tests (t tests, analysis of variance, Chi squared tests, correlation and regression). Nonparametric statistical techniques. The use of statistical software to carry out statistical analyses. Analytic decision strategies.

**CHSC 7820** Biostatistics for Community Health Sciences  
1 Cr.Hrs.3  
The course will cover techniques of research design and analysis for community health researchers. Topics include: principles of experimental design, study size determination, statistical software as an analytical tool, techniques for the analysis of continuous outcomes, analysis of variance for multi-way, factorial and split-unit experiments, and multiple regression and general linear models. Introduction to more advanced statistical methods including logistic regression and survival models. Prerequisite: Undergraduate course in statistics.

**CHSC 7830** Biostatistics for Community Health Sciences  
2 Cr.Hrs.3  
This course will cover techniques for the analysis of complex data sets involving continuous, categorical and time-related outcome variables. Principles of statistical modeling. The behaviour of non-continuous variables. Categorical outcome variables and logistic regression. Poisson outcome variables and Poisson regression. Time-dependent outcomes, survival analysis and proportional hazards regression. Prerequisite: CHSC 7820 with a grade of B+ or better.

**CHSC 7860** Methods and Concepts for Community Health Sciences Cr.Hrs.3  
This course is designed to provide both a practical and theoretical introduction to qualitative, quantitative, and multi-method approaches used in health research. The emphasis in the course will be on applied research, consistent with the characteristics of the Department of Community Health Sciences as a whole.

**CHSC 7870** Health Survey Research Methods Cr.Hrs.3  
Students critically examine the use of health survey methodology within epidemiology. They also learn to apply survey methodology, as a means to gain a strong appreciation of the reflective, theoretical and analytical thinking required to successfully design and implement epidemiological health surveys. Prerequisites: CHSC 7820 and CHSC 7520.

## General Management

**GMGT 7010** Business Policy Seminar Cr.Hrs.3  
This course entails the study of general management. Students shall integrate the concepts from the various functional areas of the organization covered in the program with the different environments: social, political, economic and technological. Students will analyze general management problems, shall formulate policies, and display ability to implement policies. Must be taken in final term in



the program.

**GMGT 7060** Readings in Business Administration Cr.Hrs.3  
(Formerly 027.706) Supervised readings in one of the areas of business administration including human resource management, industrial relations, organizational behaviour, policy and environment.

**GMGT 7070** Administrative Studies Research Project Cr.Hrs.6  
(Formerly 027.707) Research in any one of the areas of administrative studies.

**GMGT 7080** Research Methods Cr.Hrs.3  
(Formerly 027.708) Principles of research design and data collection with examples drawn across the areas of marketing management, industrial relations, policy analysis, etc. Both cases and computer-based exercises are used. Prerequisite: MSCI 5010 (or 164.501 or 027.501).

**GMGT 7090** Organizational Decision-Making Cr.Hrs.3  
(Formerly 027.709) A study of the goal-setting and decision-making processes in organizations and the implications for the growth and survival of such organizations.

**GMGT 7100** Interpersonal Processes Cr.Hrs.3  
(Formerly 027.710) An examination of theories of interpersonal behaviour and processes as they apply to managerial situations. Emphasis upon individual behaviour and change, group dynamics, leadership behaviour, and communications.

**GMGT 7110** Business and Its Environment Cr.Hrs.3  
(Formerly 027.711) Analysis of the environmental factors within which a business operates.

**GMGT 7120** Organizational Power and Politics Cr.Hrs.3  
(Formerly 027.712) An examination of personal, interpersonal and organizational power in the context of organizational politics. Topics covered include rational versus political models of organizations, the accumulation and management of personal power, the politics of decision-making, the politics of managerial succession, the politics of budgets, authority, intergroup conflict, and bargaining and negotiation processes.

**GMGT 7350** Administration: Selected Topics Cr.Hrs.3  
(Formerly 027.735) Topics in one of the areas of business administration including human resource management, industrial relations, organizational theory and behaviour, and business policy and strategic management.

**GMGT 7360** Organizational Behaviour and Self Development Cr.Hrs.3  
(Formerly 027.736) This course will operate in a seminar format with two goals. The first goal is to provide an environment in which the student can develop and manage to successful conclusion a project in which they have significant intrinsic interest. The second goal is to improve the student's understanding of the inner life of an organization by increasing his/her ability to discriminate between the organizational "ropes to skip and the ropes to know."

**GMGT 7370** Managing Innovation Cr.Hrs.3  
(Formerly 027.737) An examination of organizational design characteristics in the context of a competitive international

perspective. Emphasis is on organizational and technological innovation to facilitate the development of new products or processes or to implement change in existing products or processes. Topics covered include Canadian experience and policy, facilitators and inhibitors in the creative process, diffusion of innovations, and the aims of the patent process.

**GMGT 7400** Readings in Organizational Behaviour (Ph.D.) Cr.Hrs.3  
(Formerly 027.740) An examination of theory and research from the social and administrative sciences that focuses on the interaction between organizations and their environments. The evaluation and synthesis of theoretical and empirical work in this area will be emphasized. Prerequisite: admission to the Ph.D. program in Management (Organizational Behaviour) or approval by instructor.

**GMGT 7410** Doctoral Seminar in Organizational Behaviour (Ph.D.) Cr.Hrs.3  
(Formerly 027.741) An examination of theory and research from the social and administrative sciences that is relevant to the behaviour of individuals and groups within organizations. Emphasis will be placed on evaluation and synthesis of theoretical and empirical work in this area. Prerequisite: admission to the Ph.D. program in Management (Organizational Behaviour) or approval by instructor.

**GMGT 7440** Doctoral Seminar in Organizational Theory (Ph.D.) Cr.Hrs.3  
(Formerly 027.744) The major goal of this course is to familiarize students with central schools of thought within organization theory. As with other theories in the social sciences, these schools of thought tend to be based on differing assumptions about the nature of the organizational world, the operation of causality, epistemology, and the role of human actors. Prerequisite: admission to the Ph.D. program in Management (Organizational Behaviour) or approval by instructor.

**GMGT 7510** Strategic Leadership and Managing Change Cr.Hrs.1.5  
(Formerly 027.751) An examination of the role of the manager as a change agent and processes associated with strategic vision and change. Analysis of factors affecting strategic decisions and how organizations adapt to their environment. Emphasis is upon the role of leaders: transformational leadership, charisma, organizational design and managing organizational culture change.

**GMGT 7520** Issues in Managerial Communication Cr.Hrs.3  
(Formerly 027.752) An examination of strategies and development of skills for effective oral, written, non-verbal, interpersonal, group, cross-cultural, and ethical communication in management.

**GMGT 7530** Selected Topics Cr.Hrs.3  
(Formerly 027.753) An examination of current issues in areas which could, for example, include: organizational behaviour, organizational theory, strategy, human resource management, and industrial relations. Prerequisite: consent of instructor.

**GMGT 7540** Doctoral Seminar in Research Methods (Ph.D.) Cr.Hrs.3  
(Formerly 027.754) Principles of research design and data



collection appropriate for the areas of marketing, management, industrial relations, policy analysis, finance, management science, etc. Research problems and issues will be discussed from a number of perspectives. Conceptual material, statistical analyses, theoretical material and the utilization of statistical application software are used as the bases for seminar discussion. Prerequisite: admission to the Ph.D. program in Management or approval by instructor.

**MGMT 7710** Managerial Communication Cr.Hrs.1.5 (Formerly 027.771) Focus is on the interpersonal, intergroup, and intraorganizational communication skills required for effective leadership, and the objectives are to assist the participants in the following: increasing the clarity, correctness, and effectiveness of written and oral communication; recognizing and analysing communication dynamics at work in personal, group, and organizational interactions; increasing combination flexibility and proficiency in times of corporate challenge, change, and crisis.

**MGMT 7720** Business Conditions Analysis Cr.Hrs.1.5 (Formerly 027.772) To provide an awareness of key components of the economic/business environment. Identifies critical indicators that affect decision-making and suggests strategies for forecasting future conditions. Topics covered include critical demographic trends, the change technological frontier, international trade, finance, and investment trends, and trends in interest rates and exchange rates. A theoretical overview will precede the discussion of business conditions indicators.

**MGMT 7740** Business/Government Relations Cr.Hrs.1.5 (Formerly 027.774) Focuses on the logic of political-economic-business relations. The point of view is that of the manager. Specific tools of analysis are discussed that assist managers in understanding and working with aspects of public policy which interface with their private sector decisions.

## Chemistry

**Head:** (Acting Head) P.H.M. Budzelaar

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**Email Address:** [Chemistry\\_Dept@umanitoba.ca](mailto:Chemistry_Dept@umanitoba.ca)

**Website:** <http://umanitoba.ca/chemistry>

**Academic Staff:** Please refer to website for Faculty information: <http://umanitoba.ca/chemistry>

A M.Sc. or Ph.D. in the chemical sciences provides a gateway to an exciting, challenging and frequently high-paying career. M.Sc. and Ph.D. chemists work in areas such as industrial research and development (particularly the pharmaceutical, energy, advanced materials and biotechnology sectors), medical research, environmental and pollution monitoring, and technical consulting. Ph.D. chemists and biochemists in academia have the opportunity both to teach and to pursue independent basic and applied research.

Graduate students work in close cooperation with faculty as they pursue their own thesis research projects. There are fascinating project opportunities available in the research groups within the department. Graduate courses are typically informal, and encourage small groups of students to discuss topics of current interest, in a supportive environment. The Department of Chemistry also hosts seminars throughout the year, bringing researchers from university and industrial laboratories in Winnipeg, across Canada, and abroad, to share their latest discoveries with students and faculty. The Arnes Lectureship and Betts Lectureship programs provide for extended lecture series by world-renowned chemists, who are able to interact with faculty and graduate students during their visit to the department.

Graduates of the Chemistry M.Sc. and Ph.D. programs are currently employed in chemical companies, research institutes, government laboratories and agencies, and tenured academic positions. Some have even founded their own chemical companies! Alumni of the department's graduate program now work for companies such as Apotex Fermentation, Medcure, Novopharm Biotech, Philips Paints and Border Chemicals in Winnipeg, Biovail (Steinbach), Anormed (Richmond, BC), Allelix (Mississauga), Uniroyal (Guelph), and Genzyme (Cambridge MA). Several have undertaken additional training with prominent scientists at such places as the Scripps Institute, MIT, the Howard Hughes Medical Institute, and the universities of Alberta, British Columbia, Calgary, Montréal, Sherbrooke, and Toronto. Some have gone on to academic careers, at such universities as Alberta, Calgary, Cornell, Dalhousie, Guelph, Northern British Columbia, Queen's, Toronto, York, as well as Manitoba.

### Fields of Research

Analytical Chemistry, Asymmetric Organic Synthesis, Biochemistry, Cell Biology, Chromatography, Environmental Chemistry, Inorganic Chemistry, Mass Spectrometry, Macromolecular Chemistry, Materials Science, Medicinal Chemistry, Natural Products Chemistry, NMR Spectroscopy, Organometallic Chemistry, Protein Structure and Dynamics, Synthetic Carbohydrate Chemistry, Theoretical Chemistry, Solid State Chemistry.

### Research Facilities

The department has modern instrumentation and technical support for research and teaching. There is a full-time glassblower in the department who can produce specialized glassware as required. The University Libraries provide excellent on-line connections to scientific and medical databases and full-text access to major journals.

**Computer facilities:** campus-wide UNIX and NOVELL servers; Sunfire 6800 20-CPU high-performance computing installation; access to the Westgrid high-performance computing facilities; PC, Mac, UNIX and LINUX workstations in the department; a 14-node and 24-node Beowulf cluster constructed from 12 dual processor 2.8 GHz Xeon computers have been installed in the department.



**NMR facilities:** Bruker Avance300 and AMX 500 instruments, and a Varian INOVA 600 system; all are multi-nuclear and have pulsed field gradient capabilities; the AMX 500 and INOVA 600 are equipped for both liquid and solid-state work.

**Mass Spectrometry:** a two-sector high-resolution spectrometer with EI, CI and FAB sources, operational in positive and negative ion modes; a Quattro-LC triple quadrupole instrument equipped for electrospray ionization (ESI); a Bruker Biflex IV MALDI-TOF instrument for the analysis of large biomolecules; through the Physics department, Chemistry researchers have access to advanced experimental time-of-flight instruments.

**Advanced Synthesis:** A high throughput HPLC-MS-UV autopurification system (Waters) and a parallel organic synthesizer (quest).

**The Ultra-Clean Trace Elements Laboratory (UCTEL):** a metal-free class-1000 to Class 100 environment equipped with a PE Elan DRC II ICP-MS, a Waters non-metallic HPLC a CEM Mars V Microwave Digestion System, and a Tekran 2600 Mercury Analyzer.

**Crystallography facilities:** a high-resolution powder X-ray diffractometer with a high-temperature furnace. In addition the Department has access to single crystal diffractometers and cameras.

**Thermal Analysis:** a high-temperature thermal gravimetric/differential thermal analyzer (TGA/DTA) is available.

**Spectroscopy facilities:** a 15W argon laser with a 14018 double monochromator for Raman spectroscopy; a Fourier transform microwave spectrometer equipped with ion sources, Helmholtz coils and Stark plates.; an UV-Vis-NIR spectrophotometer (Varian Cary 5000), a coherent dye laser for intracavity photoacoustic spectroscopy; a Nicolet FT-IR system; a second Nicolet interferometer is equipped for solid-state FT-IR studies, and is also set up for Raman spectroscopy; a UV-vis diode array spectrophotometer; routine FT-IR and stopped flow equipment is also available.

**Circular Dichroism Spectropolarimeter-Fluorometer:** Our Jasco J-810 instrument is equipped with a computer-controlled Peltier device and circulating water bath for temperature control using both cylindrical and rectangular cells. The fluorescence accessory permits concurrent circular dichroism and fluorescence measurements between 163 and 900 nm.

**Electrochemical facilities:** a BAS 100A electrochemical workstation with rotating disk and controlled growth mercury drop electrode attachments; a CH Instruments 660 electrochemical workstation with a picoamp booster attachment for ultramicroelectrode measurements; a CH Instruments 400 electrochemical workstation with quartz crystal microbalance (QCM); a Solartron 1287 electrochemical interface and a 1255B frequency response analyzer for impedance measurements; and a Lecroy 9310A 400 MHz dual channel oscilloscope, a Stanford Research

Systems SR560 amplifier and a Wavetek 182A function generator for fast scan cyclic voltammetry.

**Surface and interfacial science facilities:** a Kratos Axis Ultra high performance imaging x-ray photoelectron spectroscopy (XPS) instrument; a JEOL JAMP-9500F field emission Auger microprobe/scanning electron microscope (SEM); a JOEL JEM-2100F advanced field emission transmission electron microscope (TEM); a CAMECA IMS 7f magnetic sector secondary ion mass spectrometer (SIMS); a Digital Instruments Nanoscope IV with a Dimension 3100 SPM, a closed-loop SPM, a MultiMode SPM with multiple heads, a universal bipotentiostat, and an EnviroScope AFM; a ThermoNicolet Nexus 870 FT-IR with a polarization modulated infrared reflectance absorbance spectroscopy (PM-IRRAS) and attenuated total reflectance spectroscopy (ATR) modules; a Sentech SE400 ellipsometer; and a Ramé-Hart computerized contact angle goniometer.

**Chromatography facilities:** numerous HPLC systems; a preparative HPLC/ MS system; a GPC system with light-scattering, refractive index, diode-array and electrochemical detectors.

**Other equipment:** A Differential Scanning Calorimeter with Intracooler and Ultramicrobalance (Perkin-Elmer DSC Diamond); a Spin Coater (Laurell Technologies); a Polarized Light Optical Microscope System with Heating/Cooling stage (Olympus/Linkam); a Dynamic Light Scattering Instrument for Particle Sizing (Microtrac Inc.); a Liquid Crystal Test-bed for testing electro-optical properties of LC-mixtures (LC Vision); a Pure-Water System; a Laminar Flow Clean-air workbench and an Ultrasonic Processor (Sonics).

**Manitoba Chemical Analysis Lab (MCAL)** A "state of art" chemical analysis facility (MCAL) is available in the Department of Chemistry. The laboratory offers a wide range of instrumentation for the analysis of biological, environmental and industrial samples. The facility is used for undergraduate used for undergraduate teaching laboratories and can be accessed by University researchers, graduate students and industry.

### M.Sc. in Chemistry, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the [Graduate Studies Regulations Section](#) of this Calendar.

### Application Deadlines

Potential M.Sc. students should explore the Chemistry Department website, prior to making formal application to the department of Chemistry. They are encouraged to submit the on-line information form found on the website. The following deadlines for receipt of complete application materials apply to potential students holding bachelors' degrees from Canadian and Non-Canadian universities.

Start Date	Canadian/U.S.	Non-Canadian
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Regular	(September)	June 1	March 1
Winter	(January)	October 1	July 1
Spring	(May)	February 1	November 1
Summer	(July)	April 1	January 1

**Program Requirements**

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

Colloquium: A weekly colloquium is given by members of staff, post-doctoral fellows, or invited lecturers. All graduate students and fourth-year Honours students are expected to attend the colloquia.

Second language reading requirement: none

Expected time to graduate: 2 years

**Ph.D. in Chemistry, Admission**

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Only students holding M.Sc. degrees from Canadian universities will be admitted directly into the Ph.D. program. Other students will be admitted as M.Sc. candidates, with the option to transfer into the Ph.D. program after 1 year of satisfactory studies.

**Application Deadlines**

Potential Ph.D. students should explore the Chemistry Department website, prior to making formal application to the department of Chemistry. They are encouraged to submit the on-line information form found on the website. The following deadlines for receipt of complete application materials apply to potential students holding bachelors' degrees from Canadian and Non-Canadian universities.

Start Date	Canadian	Non-Canadian	
Regular	(September)	June 1	March 1
Winter	(January)	October 1	July 1
Spring	(May)	February 1	November 1
Summer	(July)	April 1	January 1

**Program Requirements**

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, a minimum of three years (including the year spent in M.Sc. work) is required for the Ph.D. degree. Actual time spent is usually somewhat longer.

Colloquium: A weekly colloquium is given by members of staff, post-doctoral fellows, or invited lecturers. All graduate students and fourth-year Honours students are expected to attend the colloquia.

Second language requirement: none

Graduate Studies

Expected time to graduation: 4-5 years (from 4 year B.Sc.); 3 years (from M.Sc.)

**CHEM 7400** Topics in Biochemistry Cr.Hrs.3 (Formerly 002.740) A lecture and seminar course dealing with selected topics of current interest in biochemistry and molecular biology.

**CHEM 7410** Spectroscopy and Molecular Structure Cr.Hrs.3 (Formerly 002.741) Applications of spectroscopic methods to chemical problems with emphasis on mass spectrometry and related techniques.

**CHEM 7450** Topics in Organic Chemistry Cr.Hrs.3 (Formerly 002.745) A discussion of current and general topics related to novel and interesting areas of organic chemistry appearing in the current literature.

**CHEM 7460** Topics in Synthetic Organic Chemistry Cr.Hrs.3 (Formerly 002.746) A course designed to acquaint students with specific methods of synthesis.

**CHEM 7520** Topics in Physical Chemistry Cr.Hrs.3 (Formerly 002.752) The topics will vary, depending on student needs and interests; they may include, but will not be limited to the following: electrochemistry, surface chemistry, electrochemical kinetics, or other specialized topics not available in regular course offerings.

**CHEM 7550** Design of Organic Synthesis Cr.Hrs.3 (Formerly 002.755) Conceptual methodology in the design of synthesis will be discussed with inclusion of computer-aided approaches. Examples from the current literature will be used to emphasize the conceptual aspects.

**CHEM 7560** Organometallic Chemistry Cr.Hrs.3 (Formerly 002.756) Recent advances in synthetic and structural organometallic chemistry.

**CHEM 7580** Chemical Crystallography Cr.Hrs.3 (Formerly 002.758) Theory and practice of crystal structure analysis with emphasis on single crystal x-ray diffractometry; structure-activity relationships in small organic and inorganic compounds; introduction to protein and nucleic acid crystal structure analysis.

**CHEM 7600** Topics in Inorganic Chemistry Cr.Hrs.3 (Formerly 002.760) Topics of current research interest in the area of inorganic chemistry including, but not limited to synthesis, structures, catalysis and reaction mechanisms.

**CHEM 7700** Topics in Analytical Chemistry Cr.Hrs.3 (Formerly 002.770) Topics of current research interest in analytical chemistry including, but not limited to, mass spectrometry of large molecules, separation techniques, analysis of metals, surface analytical techniques, analysis of environmental samples, analysis of 'real' samples, and sampling techniques. Prerequisites: CHEM 4590 (or 002.347) or permission of instructor.

**CHEM 7800** Topics in Theoretical Chemistry Cr.Hrs.3 (Formerly 002.780) Topics of current research interest in theoretical and computational chemistry from such areas as ab initio quantum chemistry, molecular simulations, nonlinear reaction dynamics, spectroscopy and statistical



mechanics.

**CHEM 7900** Seminar in Current Research Issues in Chemistry Cr.Hrs.3  
Student-led seminars covering areas of interest to the faculty and students in the graduate Chemistry program, and current research issues in the field of Chemistry (including biochemistry, spectroscopy, organic chemistry, physical chemistry, organic synthesis, organometallic chemistry, inorganic chemistry, analytical chemistry and theoretical chemistry).

## City Planning

**Head:** (and Graduate Chair) Milgrom, Richard

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**Website:** <http://umanitoba.ca/cityplanning>

**Academic Staff:** Please refer to website for Faculty information: <http://umanitoba.ca/cityplanning>

The Department of City Planning is the oldest continuing planning school in Canada offering a program of studies leading to the Master of City Planning degree. The program provides opportunities to develop and enhance skills, often in service learning situations involving local clients. Students come from varied academic backgrounds and the curriculum is structured to satisfy the requirements of professional accreditation and to foster expertise in selected fields of study. In collaboration with the Manitoba Professional Planners Institute (MPPI), the program includes an internship of planning work. An optional mentoring program links the student with a volunteer from MPPI for discussions on career strategies or other matters.

The program is directed by four principles. The first, and the focus of the program, is the enhancement of the built and natural environments of cities and regions. The second principle, professionalism, is based on the understanding that students enter the program with the expectation of finding professional employment and of making their careers in planning or closely related fields. It leads to a focus on professional practice and responsibilities, and on the skills necessary to translate knowledge into effective action. The third principle is that planning is a multidimensional and multidisciplinary activity requiring highly transactive and collaborative outlooks and practices to advance strategies that are socially just and environmentally sustainable. The fourth principle is that scholarship constitutes a fundamental and lasting value for a planning career, and consequently there is emphasis on historical and theoretical aspects of development, research methods, clarity of critical thought and expression, and the relationships between planning thought and practice.

### Fields of Research

- Community development; community design and participatory methods
- Gender issues in planning and design
- Housing studies; homelessness; low-cost housing strategies
- Planning practice; planning methods; integral praxis; placemaking
- Planning with Aboriginal communities
- Regional planning; city-regions; bioregionalism
- Transportation planning
- Urban ecology; sustainable planning; case studies of ecological innovation

### Research Facilities

The Computer Aided Design Laboratory (CADLAB) is a major centre of research and hands on training offering cutting edge digital resources and an experienced complement of teaching and support staff. Extensive data bases provided by governmental and non-governmental sources are linked to GIS applications. The Architecture and Fine Arts Library, housed in the Russell Building, holds some 61,000 volumes dedicated to the planning, art and design disciplines represented in the University, including over 400 current periodicals. Over 100,000 35mm slides are available and electronic resources include networked bibliographic and full text resources. Studio space is provided in the Russell Building and Architecture 2, as well as occasionally on or near a study site.

### Master of City Planning (M.C.P.), Admission

Applicants must meet the entrance requirements of the Faculty of Graduate Studies as well as the City Planning admission requirements found on the City Planning website.

The department of City Planning allows students to begin their MCP program on either September 1st or, at the Department's discretion, January 1st.

For admission on these start dates, applications - with complete supporting documentation, should be sent to the Faculty of Graduate Studies by the following deadlines:

Start Date	Canadian/US	International
Regular - September	January 15th	December 1st
Winter - January	September 15th	n/a

Late applications may be considered if spaces become available after the main allocations.

### Program Requirements

Applicants must meet the minimum program requirements of the Faculty of Graduate Studies. Additional detailed program requirements for City Planning are found on the City Planning website.

**Degree Requirements:**

Degree requirements: 45 credit hours total

Second language reading requirement: none

Expected time to graduation: two years

**CITY 7020** Planning Methods and Techniques II Cr.Hrs.3  
(Formerly 073.702) A survey of quantitative and qualitative methods and techniques used in planning analysis and decision making including sampling survey, case study, contingency and spatial analysis as well as phenomenological and simulation techniques and methodologies.

**CITY 7030** Planning Theory 1 Cr.Hrs.3  
(Formerly 073.703) The principal ideas and ideals influencing planning thought and practice, ranging from rational comprehensive planning to theories of societal guidance, ethics and the human-environment interface.

**CITY 7070** Housing and Urban Revitalization Cr.Hrs.3  
(Formerly 073.707) Housing and urban revitalization in the Canadian context. Housing demand and supply, structure of the housing market, Canadian housing policy, affordability and other selected housing issues; processes and strategies related to urban decline and revitalization.

**CITY 7160** Land Development Cr.Hrs.3  
(Formerly 073.716) Application of theories and techniques of urban land development, formulation of industrial policies and financial and political implications of land development.

**CITY 7170** Transportation Cr.Hrs.3  
(Formerly 073.717) Transportation modes and systems: land, water, air. Traffic studies, planning principles, public issues and governmental policies.

**CITY 7200** Urban Analysis Cr.Hrs.3  
(Formerly 073.720) Theoretical framework for the dominant theories of urban structure, property and land-use relevant to city planning.

**CITY 7270** Seminar in Regional Planning Cr.Hrs.3  
(Formerly 073.727) An exploration of eco-regional planning drawing on concepts of city-states (or city-regions) and bioregionalism; including contemporary theme research, and a region-specific analysis to inform an understanding of regional planning's past, present and future.

**CITY 7300** Urban Society Cr.Hrs.3  
(Formerly 073.730) An interdisciplinary seminar on social policy and social planning in the contemporary urban setting. National, provincial and local contexts shaping the provision of welfare and well-being. Demonstration of selected social planning techniques. Application to current issues.

**CITY 7310** Law and Local Government Cr.Hrs.3  
(Formerly 073.731) Topics of common law, torts, real property, land use planning and control, expropriation, and local government, including some recent cases.

**CITY 7340** Urban Development Cr.Hrs.3  
(Formerly 073.734) The mechanics of urban development and its socio-economic implications and underlying political forces. Practical field experience is involved in the form of an internship.

**CITY 7350** Thesis/Practicum Preparation Cr.Hrs.0  
(Formerly 073.735) A preparatory course for students registered in thesis or practicum. Methods of constructing problems, formulating hypotheses, methods of investigation, sources of information, and appropriate form and content of thesis and/or practicum. This course is graded pass/fail.

**CITY 7360** Development Process for Design Professions Cr.Hrs.3  
(Formerly 073.736) Introduction to the development process and method. Site selection and planning. Feasibility and case studies. The dynamics of development teams, including marketing strategies and management of completed projects. Joint public and private enterprises.

**CITY 7370** Urban Design Cr.Hrs.3  
(Formerly 073.737) Theory and concepts of urban design from historical and contemporary perspectives. Urban design seen as (a) a multidisciplinary activity, (b) conscious three-dimensional design, and (c) process and public policy. Implementation and control techniques of urban design. Case studies.

**CITY 7410** Planning Design 1 Cr.Hrs.6  
(Formerly 073.741) Studio/workshop developing problemsolving techniques and design skills in an area subject to environmental, social and economic change. Preparation of a planning report comprising of research and analysis, evaluation of feasible alternative strategies and designs, synthesis and recommendations for implementation. Case studies from planning journals and planning practice in cities and regions.

**CITY 7420** Planning Design 2 Cr.Hrs.6  
(Formerly 073.742) Studio/workshop building upon CITY 7410 (or 073.741) as applied to an area of greater complexity, requiring the evaluation and integration of contributions from several planning-related disciplines. Selected projects emphasize both the multidisciplinary and interdisciplinary nature of planning, and in the resolutions of the problems posed. Case studies from planning journals and planning practice in cities and regions.

**CITY 7430** Planning Design 3 (Urban Design) Cr.Hrs.6  
(Formerly 073.743) The application of urban design theories and techniques to a large scale urban area of complex land uses and community development issues. The studio is also open to advanced students in architecture, landscape architecture and interior design and develops a broad approach to multi-disciplinary problemsolving design solutions.

**CITY 7440** Planning Design 4 Cr.Hrs.6  
(Formerly 073.744) Advanced planning design studio/workshop, experimental and innovative in approach and content, involving special techniques and skills. Studio may also be off-campus and/or focussed on a special topic centred around a distinguished guest expert.

**CITY 7450** Concepts in Sustainable Planning and Design Cr.Hrs.3



(Formerly 073.745) Examination of the concepts and theories involved in the development of sustainability as a force in socio-economic and environmental decision-making. Explores the implications of sustainability for contemporary design and planning thought and practice.

**CITY 7460** Urban Ecology and Environmental Management Cr.Hrs.3

(Formerly 073.746) Theoretical frameworks and theories in urban ecology and environmental management as they apply to municipal institutional frameworks and the role of environmental planning in urban and regional government.

**CITY 7470** Professional Planning Practice Cr.Hrs.3

(Formerly 073.747) An examination of the professional practice and praxis of planning, presented in collaboration with the Manitoba Association of the Canadian Institute of Planners, emphasizing the practice aspects of planning processes, and the political, institutional and legal systems that direct and/or inform planning.

## Civil Engineering

**Head:** Dr. Ahmed Shalaby, P.Eng. (204) 474-6818

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**Website:** <http://umanitoba.ca/civil>

**Assoc. Head:** Dr. James Blatz, P.Eng. (204) 474-9816

**Academic Staff:** Please refer to website for Faculty information: <http://umanitoba.ca/civil>

The Department of Civil Engineering offers programs of coursework and research leading to the Master of Science, Master of Engineering and Doctor of Philosophy in: environmental engineering; geotechnical engineering; structural engineering; transportation engineering and water resources engineering.

### Research Facilities

**Environmental Engineering Equipment and Facilities:** The environmental engineering program and laboratory offer the latest in instruction and facilities for studying the physico-chemical and biological transformation of pollutants in water, wastewater and solid waste. In particular, the program aims at developing the principles of reactor and process engineering for the treatment of water, industrial and municipal wastewater and solid waste. State-of-the-art analytical equipment includes high performance liquid chromatographs with a variety of detectors, gas chromatographs, automated ion analyzers, atomic absorption spectrophotometer, carbon analyzer, microbial toxicity analyzer and others. Spacious laboratories allow for bench scale testing of various process conditions in four controlled temperature environmental chambers. Present research interests include biological nutrient removal, volatile acids fermentation, solid stream processing through aerobic and anaerobic digestion, co-digestion and co-composting of municipal and industrial solid waste, biodegradation of

hazardous pollutants, treatment in cold climates, pesticide waste treatment; surface and groundwater treatment processes, and upgrading of municipal and industrial treatment plants.

**Geotechnical, Hydrogeology and Geoenvironmental Engineering Equipment and Facilities:** Equipment in the geotechnical laboratories reflects the research interests of the department's staff in the engineering behaviour of a wide range of naturally occurring materials. In addition to the normal range of consolidation, direct shear and triaxial shear test facilities, specialized facilities have been provided for studies on swelling clays, at high pressures and temperatures, granular soils, and hard crystalline rocks.

The clay testing program involves stress-controlled tests to investigate the distinction between yielding and rupture in carefully sampled natural clays, and the effects of load duration and temperature on soil behaviour. Applications include estimating settlements of foundations, embankments, and tanks and the stability of slopes and excavation. Additional work involves the development of appropriate constitutive models for soil behaviour, and the measurement of hydraulic conductivities for retention structures.

An environmental chamber permits testing of soil samples under freezing conditions. A well-equipped geotechnical computing laboratory provides support for numerical analysis in soil mechanics, rock mechanics and hydrogeology. It also supports data presentation and report preparation in experimental programs. In rock mechanics, equipment is available for performing tests for Brazilian tension, flexure, uniaxial compression, triaxial compression, static fatigue, creep in both tension and compression, and the double torsion test used in fracture mechanics. Present research interests concentrate on the relationship between crack growth, stress level and time, with special emphasis on microstructural processes in the rock.

The geoenvironmental engineering laboratory has the equipment to characterize landfill construction materials, leachates, and hazardous wastes. Current research focuses on hazardous waste containment, soil bioremediation, and aerobic composting.

The focus of the hydrogeology research efforts is directed towards modelling and simulation of groundwater and contaminant transport. Resources are also directed at sustainable aquifer development within the Manitoba environs.

With current developments in computer technology and its associated impacts on geotechnical engineering, the University of Manitoba has kept up by providing graduate students in geotechnical engineering with state-of-the-art computer facilities. The geotechnology computer facility at the University of Manitoba has 8 personal computers, 3 SPARC workstations, all connected on a local area network with T1 Internet access 24 hours a day.

**Structural Engineering Equipment and Facilities:** The research facilities include concrete, structural, and materials



laboratories covering approximately 7500 sq. ft. A Structural Engineering and Construction Research and Development Facility adds 2500 sq. ft. and includes a 23-ton overhead crane, as well as a 1,200,000-lb.-capacity MTS servo-controlled loading system. The new facilities enable the testing of full-scale specimens. Also in the structural laboratory are a 600,000-lb. Baldwin testing machine, a 60,000-lb. Riehle testing machine and a 30,000-lb. Baldwin testing machine. A number of jacks and loading frames are also available which can be attached to two strong floors and allow a wide range of loading assemblages to be set up easily. The laboratory also houses an MTS servo-controlled loading system, with a 220,000-lb. test frame and one fixed and one portable actuator, which can be used for programmed cyclic and fatigue testing. The materials laboratory contains an environmental cabinet and a freeze/thaw cabinet which are used to study the behaviour of materials under a wide range of temperatures and humidity. Three high-speed computer-controlled data acquisition systems are available for both laboratory and field testing.

Theoretical and Applied Mechanics Equipment and Facilities: Research Facilities in Theoretical and Applied Mechanics include several workstations and a variety of engineering analysis software. Current research is directed toward investigation of non-destructive evaluation of flaws in plate and shell structures, dynamics of electrical transmission lines and communication towers; finite and boundary element analysis, and mechanics of piezo ceramics, shape memory alloys and smart structures.

Water Resources Engineering Equipment and Facilities: The Hydraulics Research and Testing Facility (HRTF) has an area of 780 sq m and supports both physical and numerical modelling in hydraulics. The physical modelling laboratory houses a constant-head tank (500 l/s capacity), a 15 m variable slope flume, a 14 m hydraulic model flume, and a 34 m random wave flume. Floor space is available for the study of hydraulic structures and river models. The facility is also equipped with a range of modern instrumentation including acoustic Doppler velocimeters (3 component), hot-wire probes, servo-motor positioning systems, electronic discharge monitoring with inline volumetric tanks for calibration, and high speed data acquisition equipment. All of the computers in the physical modelling laboratory are networked to the facility's computer lab. A counter-rotating flume and cold room (to -30 C) are used to study hydraulics of frazil and anchor ice. A digital image acquisition and processing system complement the facility's ice research equipment. The HRTF computer laboratory has a number of high-end Pentium based PCs for numerical modelling. Software is available for 2D finite-element modelling of rivers and lakes, sediment transport modelling, and 2D modelling of wind generated wave fields.

The Hydrologic Processes Laboratory (HPL) supports research dealing with the management and analysis of spatially distributed in situ and remotely sensed data, for solving complex, large-scale problems of hydrology. The facility has several PC machines linked to a main UNIX workstation. A wide variety of software is available within HPL, including ARC/INFO, Arcview and other GIS, as well as ENVI software for processing remotely sensed data. The emphasis of research carried out in the facility is in

distributed hydrological modelling, operational hydrology, and environmental monitoring using remotely sensed data.

### **M.Sc. in Civil Engineering Admission**

For admission into the Master of Science program, applicants are required to hold a bachelor's degree in Civil Engineering from a recognized university. Applicants with other engineering degrees or with honours degrees in related areas may also be accepted at the discretion of the department head and the dean of the Faculty of Graduate Studies. In certain cases acceptance may initially be limited to pre-Master's study. Please contact the Department for details.

### **Application Deadlines**

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 4 months prior to their intended start date. International students should submit their application and supporting documentation to the Department of Civil Engineering at least 7 months prior to their intended start date.

### **Program Requirements**

The Master of Science degree is attainable only through coursework and thesis. Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. M.Sc. students are required to spend at least one academic session in full-time resident graduate study. On recommendation of the department and the Faculty Graduate Committee, the residence requirement may be waived in special cases.

A minimum of 18 credit hours of coursework is required with at least 12 credit hours at the 7000 level. The coursework program would normally include 6 credit hours of ancillary courses from other than the candidate's discipline. These ancillary courses could include courses from the department or courses from another department, normally at the 4000 level. Depending upon the student's background, the student's advisor may require the student to take 3000 level or additional 4000 level (and in exceptional circumstances, 2000 level) courses in major or ancillary fields of study which would not count towards the minimum 18-credit hour requirement. The candidate is required to make an oral presentation on the completed M.Sc. thesis to the Examining Committee, and to pass an oral examination.

The maximum time allowed for the completion of the Master's degree is 5 years.

Second language reading requirement: none

Expected time to graduate: two years

### **M.Eng. in Civil Engineering**



The Master of Engineering (M.Eng.) program provides an industrially oriented program for practicing engineers who wish to continue their studies on a broad base. The program also facilitates continuing education for credit.

### Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Department of Civil Engineering at least 4 months prior to their intended start date. International students should submit their application and supporting documentation to the Department of Civil Engineering at least 7 months prior to their intended start date.

### Program Requirements

It is desirable that full-time students have one or two years of engineering experience. The minimum requirement for the award of the Master of Engineering degree is 30 credit hours. The degree can be obtained through two different options:

#### Option 1

##### Coursework Alone/Comprehensive Examination

The minimum requirement of 30 credit hours can be met by coursework alone with at least 18 credit hours at the 7000 level. The program should include 6 credit hours of ancillary coursework from other than the candidate's discipline. These ancillary courses could include courses from the department or courses from another department, normally at the 4000 level. Depending upon the student's background, the student's advisor may require the student to take 3000 level or additional 4000 level (and in exceptional circumstances, 2000 level) courses in his/her major or ancillary field of study which would not count towards the minimum 30-credit-hour requirement.

Students must pass a Comprehensive Examination (GRAD 7010).

#### Option 2

##### Coursework and Project and Report

The minimum requirement of 30 credit hours can be met by a combination of coursework and an engineering report, with at least 12 credit hours at the 7000 level. Of the 30 credit hours, 6 credit hours will be assigned to an approved project and report. The program should include 6 credit hours of ancillary coursework from other than the candidate's discipline.

These ancillary courses could include courses at the 4000 level from the Department of Civil Engineering or from another department, normally at the 4000 level. Depending upon the student's background, the student's advisor may require the student to take 3000-level or additional 4000 level (and in exceptional circumstances, 2000 level) courses in the major or ancillary field of study which would not count towards the minimum 30- credit-hour course requirement.

The candidate is required to give an oral presentation on the project at about the time the report is submitted.

Second language requirement: none

Expected time to graduation: Two years

### Ph.D. in Civil Engineering Admission

Admission to the Ph.D. program is normally from the Master's degree level, i.e., M.Eng. or M.Sc. Students making exceptional progress while enrolled in either the M.Eng. or M.Sc. program may be transferred to the Ph.D. program by the dean of the Faculty of Graduate Studies upon the recommendation of the department head based on recommendations from the student's advisor and an appointed Selection Committee. In such cases, the program credit-hour requirements shall be decided in conjunction with the transfer.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 4 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

### Program Requirements

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. The Ph.D. program consists of coursework, original research and thesis. Normally, 12 credit hours of coursework (all at the 700/7000 level) are required beyond the Master's degree or its equivalent. The minimum time requirement is two calendar years of full-time study and research, of which at least one academic year must be spent on campus. For research projects conducted off-campus, the student must be geographically proximate to the campus and visit it regularly.

Second language requirement: none

Expected time to graduation: Four years

**CIVL 7010** Modern Railway Engineering Cr.Hrs.3  
(Formerly 023.701) A course in aspects of the design,



construction, and operation of modern railways, examining main lines, branch lines, and terminals.

**CIVL 7040** Analysis and Design of Freight Transport Systems Cr.Hrs.3

(Formerly 023.704) Overview of the structure and organization of Canada's freight transport system; measurement, analysis and forecasting of freight movements; transportation system performance; operating, service and cost characteristics of freight transport systems; design considerations for freight handling facilities; case studies in analysis and design of freight transport systems. Prerequisite: CIVL 4840 (or 023.484) or permission of the instructor for non-engineering students specializing in transport studies.

**CIVL 7050** Transportation Engineering in Developing Regions Cr.Hrs.3

(Formerly 023.705) Aspects of transportation in developing regions that differ significantly from those of conventional North American practice. Factors and assumptions in developing region context; analysis and design of surface transportation systems and components in developing regions; special aspects of professional practice; case studies from Third World and northern Canada.

**CIVL 7060** Analysis and Design of Passenger Transport Systems Cr.Hrs.3

(Formerly 023.706) Passenger travel forecasting principles and techniques; demand models; passenger transportation system performance; vehicle cycles; cost functions; congestion; evaluation; examination of case studies.

**CIVL 7090** Water Resources Systems Cr.Hrs.3

(Formerly 023.709) The application of operations research/systems analysis techniques to water resources and urban and environmental systems. Prerequisite: permission of instructor.

**CIVL 7100** Prestressed Concrete Cr.Hrs.3

(Formerly 023.710) A study of the analysis and design of prestressed concrete structures; pre-tensioning; post-tensioning; importance of material properties; modern design specifications.

**CIVL 7140** Structural Masonry Cr.Hrs.3

(Formerly 023.714) Masonry materials, properties and behaviour. Plain and reinforced masonry, axial load, flexure, combined loading. Design methods, building code developments, building design.

**CIVL 7190** Solid Mechanics Cr.Hrs.3

(Formerly 023.719) Cartesian Tensors, analysis of stress and strain, constitutive relations, formulation and solution of problems in 2-D and 3-D elasticity, Hankel integral transforms, plasticity; yield surface and criteria, flow rule, plastic potential, hardening, viscoelasticity; creep, relaxation, basic viscoelastic models, stress-strain relations, correspondence principle.

**CIVL 7200** Topics in Environmental Engineering Cr.Hrs.3

(Formerly 023.720) Includes topics such as energy and the environment, solid waste management, and environmental problems in transport. Topics are studied through case histories of contemporary issues.

**CIVL 7210** Solid Waste Composting and Disposal Cr.Hrs.3 (Formerly 023.721) Advanced engineering principles related to resource recovery and solid waste disposal. Biological conversion technologies and the disposal of solid wastes are discussed in detail.

**CIVL 7260** Behaviour of Reinforced Concrete Members Cr.Hrs.3

(Formerly 023.726) Study of the actual behaviour and strength of reinforced concrete members; examination of recent significant publications, correlation to research with current design specifications and codes.

**CIVL 7300** Use of Fibre-Reinforced Polymers (FRP) in Structural Design Cr.Hrs.3

Fibre-reinforced polymers (FRP) constituents and properties; design of concrete structures internally reinforced with FRP, concrete members prestressed with FRP, externally bonded FRP liminates for strengthening and rehabilitation of structures; construction details and case studies of projects using FRP reinforcement.

**CIVL 7350** Topics in Advanced Structural Engineering Cr.Hrs.3

(Formerly 023.735) Lectures and seminars on selected advanced topics in structural engineering; current problems; implications on current research.

**CIVL 7360** Landslides and Slope Failures: Identification, Causes, and Control Cr.Hrs.3

(Formerly 023.736) Slope movement types and processes in soil and rock masses; recognition and identification: factors influencing stability; field investigation and instrumentation; strength properties and their measurement; stability analysis; assessment of hazard and risk analysis; stability in open pit mining; remedial measures including stabilization, protection, and warning.

**CIVL 7400** Finite Element Method in Engineering Mechanics Cr.Hrs.3

(Formerly 023.740) Review of flexibility and stiffness methods; concept of finite elements and energy formulations; various shape functions; solutions of planar and three-dimensional elasticity problems; beams, plates and shells; special problems, e.g., seepage, non-linear material.

**CIVL 7430** Special Topics in Geotechnical Engineering Cr.Hrs.3

(Formerly 023.743) A tutorial approach to the study of topics in soil, rock and ice engineering not covered in the formal coursework.

**CIVL 7450** Soil Properties and Behaviour Cr.Hrs.3

(Formerly 023.745) Testing methods for strength, compressibility and hydraulic conductivity of engineering soils; traditional models for soil characterization; introduction to hypoelastic and elastic plastic modelling; extension of models to account for strain-rate, temperature, and unsaturation; influence of soil chemistry; relationship between laboratory results and computational needs.

**CIVL 7460** Geotechnical Design with Geosynthetics Cr.Hrs.3

(Formerly 023.746) Properties and test methods of geosynthetics (i.e., geotextiles, geogrids, geomembranes, geonets and geocomposites); functions of geosynthetics



(separation, reinforcement, filtration, drainage and containment); design of reinforced soil structures (retaining walls, slopes, embankments and unpaved roads); design of filtration and drainage works; design of lined waste containment facilities; case histories.

**CIVL 7480** Soils Engineering Cr.Hrs.3  
(Formerly 023.748) Analysis and design for construction in engineering soils: review of soil strength and compressibility, site characterization, stability and settlements of shallow foundations, deep foundations, earth retaining structures, slope design and remediation, earth dams. Emphasis will be placed on published records comparing predictions with field performance.

**CIVL 7610** Special Topics in Theoretical and Applied Mechanics Cr.Hrs.3  
(Formerly 023.761) Lectures and seminar on selected advanced topics in the field of mechanics; current problems and research.

**CIVL 7650** Selected Topics in Water-Resources Development Cr.Hrs.3  
(Formerly 023.765) Lectures and seminars on selected advanced topics in water-resources engineering.

**CIVL 7660** River Engineering Cr.Hrs.3  
(Formerly 023.766) Classification of rivers; regime of river channels; channel patterns, sediment transport; design of stable channels; engineering interference (diversions, dams, dredging); river training works; hydraulic-model studies of rivers.

**CIVL 7680** Soil/Ground Improvement Techniques Cr.Hrs.3  
(Formerly 023.768) Analysis and design of mechanical and chemical treatment techniques commonly applied to problem foundation soils for civil engineering structures. Mechanical modification; hydraulic modification; modification by admixtures; modification by reinforcement and confinement; in-situ evaluation of soil improvement and monitoring.

**CIVL 7700** Water Resources Planning Cr.Hrs.3  
(Formerly 023.770) Principles and methodologies of planning water resources development projects. An evaluation of a major multi-purpose project from interdisciplinary viewpoints, incorporating those of designers, planners, critics and political decision makers. Offered in alternate years.

**CIVL 7710** Coastal Hydraulics Cr.Hrs.3  
(Formerly 023.771) Mechanics of wave motion; wave and water level predictions; types and design of coastal protection; littoral processes.

**CIVL 7720** Groundwater and Solute Transport Modelling Cr.Hrs.3  
(Formerly 023.772) The physics and numerical solution of mathematical models of steady-state and transient groundwater flow and mass transport in the saturated and unsaturated zones; introduction to the finite difference and finite element methods; popular software; other modelling techniques, including random-walk particle methods; modelling groundwater contamination; non-linear problems; applications to regional groundwater flow and groundwater recharge, aquifer resource evaluations, contamination prediction.

**CIVL 7730** Groundwater Engineering Cr.Hrs.3  
(Formerly 023.773) The role of geology and hydrogeology in the siting, design of engineering structures; synthesis of groundwater mechanics in various geologic environments; case studies in construction dewatering, groundwater resource evaluation, subsidence, seepage in dams and foundations and slope stability; basic review of analytic solutions and numerical methods.

**CIVL 7740** Special Topics in Hydrology Cr.Hrs.3  
(Formerly 023.774) Selected topics examining the statistical aspects of hydrology. Time series analysis; disaggregation processes; flood frequency analysis; analysis of extremes.

**CIVL 7750** Advanced Civil Engineering Systems Cr.Hrs.3  
(Formerly 023.775) Optimization of Civil Engineering Systems. Use of linear and dynamic programming and network theory in all aspects of civil engineering. Introduction to the use of stochastic processes in operations research. Particular emphasis is given to water resources and environmental and transportation engineering.

**CIVL 7760** Recent Developments in Bridge Engineering and Structural Health Monitoring Cr.Hrs.3  
Introduction to Intelligent Sensing for Innovative Structures (ISIS); Introduction to Civionics and Structural Health Monitoring; Sensors and Data Acquisition Systems; Theoretical Evaluation of Bridge Decks; Theoretical Evaluation of Cantilever Slabs; Theoretical Evaluation of Girders; Theoretical Evaluation of Columns; Bridge Inspections and Maintenance; Conceptual Design and Aesthetic Design of Bridges.

**CIVL 7770** Hydrological Processes Cr.Hrs.3  
(Formerly 023.777) Runoff generation and runoff modelling; scale effects in hydrology; ramifications of distributed and lumped approaches; computer models of watershed modelling; optimization schemes and minimization functions; special concerns dealing with digital elevation models.

**CIVL 7780** Advanced Behaviour and Design of Steel Structures Cr.Hrs.3  
(Formerly 023.778) Behaviour and design of welded thin-walled members; plate girders, composite construction, beam-columns, and connections. Special topics such as stability of metal structures and bracing requirements are also covered.

**CIVL 7790** Pavement Evaluation and Performance Cr.Hrs.3  
(Formerly 023.779) Pavement classification, pavement management, performance measures, condition surveys, sensor technology, material sampling, test methods on asphalt binders and unbound layers, non-destructive testing, sources of variability, pavement maintenance, rehabilitation, long-term performance.

**CIVL 7800** Design of Light Industrial Steel Buildings Cr.Hrs.3  
(Formerly 023.780) Design criteria for metal building systems; behaviour and design of tapered and prismatic built-up columns and girders; design of gable frames; behaviour and design of cold-formed members; bracing requirements for metal buildings and design of connections.

**CIVL 7820** Operational Hydrology Cr.Hrs.3  
(Formerly 023.782) Hydrographic analysis; relation between the physical processes and the hydrograph; estimation and



prediction. Floods; statistical analysis; maximum probable floods. Water supply; estimates of dependable flow, simulation, synthetic flow series, statistical analysis.

**CIVL 7840** Traffic Systems Analysis Cr.Hrs.3  
(Formerly 023.784) Mathematical theories of traffic flow, introductory queueing theory with application to traffic performance at intersections; travel forecasting principles and techniques; the use of simulation in traffic engineering design.

**CIVL 7850** Advanced Structural Dynamics Cr.Hrs.3  
Responses of single-degree-of-freedom and multi-degree-of-freedom systems, damped and undamped systems, linear and inelastic systems to dynamic excitations; free vibration, forced vibrations. Special emphasis on responses of civil structures to seismic and blast loadings.

**CIVL 7870** Advanced Engineering Analysis Cr.Hrs.3  
(Formerly 023.787) Analytical techniques used in engineering, including such topics as the application of complex variables, partial differential equations, generated Fourier series, integral transforms, and special functions, to advanced problems in civil engineering.

**CIVL 7920** Theory of Water Treatment Cr.Hrs.3  
(Formerly 023.792) Physical and chemical characteristics of water; water treatment processes including coagulation/flocculation, sedimentation, filtration, softening, adsorption, ion exchange, disinfection, and membrane processes.

**CIVL 7930** Theory of Waste Treatment Cr.Hrs.3  
(Formerly 023.793) Characteristics of waste-specific and generic determinations; unit operations and unit process for physical, chemical and biological treatment and transformation of particulate and dissolved contaminants. Biochemical transformations and degradation of hazardous pollutants; unit processes for enhanced nutrient removal and hazardous waste treatment. Full treatment trains for industrial and municipal waste treatment, including solids handling. Prerequisite: CIVL 3700 (or 023.370) and CIVL 3690 (or 023.369) or permission of instructor.

**CIVL 7950** Environmental Engineering Laboratory Cr.Hrs.3  
(Formerly 023.795) Laboratory work in water and wastewater analysis and treatment processes related to water quality management. Prerequisites: CIVL 7930 (or 023.793) and CIVL 7920 (or 023.792).

**CIVL 7960** Environmental Engineering Design Cr.Hrs.3  
(Formerly 023.796) Design of unit operations. Planning, cost effectiveness analysis, and conceptual design of a whole wastewater treatment plant. Prerequisites: CIVL 7930 (or 023.793).

**CIVL 7990** Special Topics in Transportation Cr.Hrs.3  
(Formerly 023.799) Lectures and seminars on selected topics in transportation not covered in the formal coursework.

## Classics

**Head:** (and Graduate Chair) Mark Joyal

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**Academic Staff:** <http://umanitoba.ca/classics/staff/>

The department provides programs of study leading to the degree of Master of Arts in several areas of classical studies that include Greek and Roman art and archaeology, Greek and Roman history and historiography, and Greek and Latin languages and literatures. The department attempts, within the range of expertise of its personnel, to tailor the M.A. program to the particular interests and needs of the individual student. In many instances the M.A. is planned as a preparation for admission to a Ph.D. program in another university. In the past students have had good success in proceeding to doctoral programs in leading North American and British universities.

### Fields of Research

- Greek and Roman art history and archaeology, with particular strengths in Roman North Africa, Greek ceramics and Late Antique sculpture
- Greek literature, especially lyric and dramatic poetry, philosophical literature and Hellenistic poetry and prose
- Greek language: history and lexicology
- Latin literature, especially epic and dramatic poetry
- Greek and Roman historiography
- Greek and Roman economic history
- Greek thought and intellectual history

### Research Facilities

The university library's holdings are supplemented locally by those of the University of Winnipeg. Both institutions have collected classical monographs and periodicals for over a century. Together they maintain subscriptions to a respectable number of current periodicals representing all fields of classical studies. Through the library, students have electronic access to an ever-increasing list of materials such as the *Patrologia Latina*. The department holds licenses for the *Thesaurus Linguae Graecae* data-base and the Packard Humanities Institute's data-bases for Latin literature and for documentary papyri and inscriptions.

The department holds an institutional membership in the American School of Classical Studies in Athens and the Canadian Institute in Greece. The American School makes course and field-work opportunities available to students and also gives them access to various research resources including its excellent library. Field archaeologists in the department occasionally offers credit courses and opportunities for field-experience at their overseas excavations or surveys in such places as Greece, Ukraine and North Africa.

### M.A. in Classics



## Admission

In addition to the minimum admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, demonstrated proficiency in ancient Greek and Latin and an honours B.A. or its equivalent in Greek, Latin or Classics is a prerequisite for admission to the M.A. Program.

## Application Deadlines

The deadline for students to submit their application and supporting documentation to the Faculty of Graduate Studies is March 1 prior to the intended start date. However, students who wish to be considered for financial assistance from the University of Manitoba must submit their application and supporting documentation no later than January 15 prior to the intended start date.

## Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. Course work will normally include 12 credit hours at the 7000 level, but students may be required to complete further courses. Students are required to pass one Greek reading exam and one Latin reading exam on prescribed texts, normally at the end of the first year of their programs. A knowledge of French and/or German is not required but is desirable.

Language Reading Requirements: Latin and Greek

Expected Time to Graduate: Two years.

## Ph.D. in Classics

There is no Ph.D. program in the Department of Classics.

## Classics--Greek

### GRK 7100 Greek Literature 1 Cr.Hrs.3

A reading course involving a selected Greek author or authors, or a set of related works.

### GRK 7102 Greek Literature 2 Cr.Hrs.3

A reading course involving a selected Greek author or authors, or a set of related works.

### GRK 7110 Greek History Cr.Hrs.3

This course will investigate aspects of Greek history, emphasizing different topics, sources, and theoretical approaches. Possible focuses for the course include a period of Greek history, or a particular region of the Greek world.

## Classics -Latin

### LATN 7200 Latin Literature 1 Cr.Hrs.3

A reading course involving a selected Latin author or authors, or a set of related works.

### LATN 7202 Latin Literature 2 Cr.Hrs.3

A reading course involving a selected Latin author or authors, or a set of related works.

### LATN 7210 Roman History Cr.Hrs.3

This course will investigate aspects of Roman history, emphasizing different topics, sources, and theoretical approaches. Possible focuses for the course include a period of Roman history, or a particular region or province of the Roman Empire.

## Classics -Classics

### CLAS 7300 Topics in Greek Art and Archaeology Cr.Hrs.3

This course will investigate aspects of Greek art, archaeology, and material culture, emphasizing different topics, methods, genres, or theoretical approaches. Possible focuses for the course include vase painting and other ceramic artifacts, sculpture, architecture, the archaeology of particular regions, and archaeological approaches to the economy and other issues in social history.

### CLAS 7302 Topics in Roman Art and Archaeology Cr.Hrs.3

This course will investigate aspects of Roman art, archaeology, and material culture, emphasizing different topics, methods, genres, or theoretical approaches. Possible focuses for the course include sculpture, architecture, mosaics, wall painting, the archaeology of particular regions, and archaeological approaches to the economy and other issues in social history.

### CLAS 7310 Readings in Selected Topics 1 Cr.Hrs.3

Intensive study of one or more authors in Greek or Latin literature or of a special topic in ancient history.

### CLAS 7320 Readings in Selected Topics 2 Cr.Hrs.3

Intensive study of one or more authors in Greek or Latin literature or of a special topic in ancient history.

## Community Health Sciences

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[http://umanitoba.ca/faculties/medicine/units/community\\_health\\_sciences/](http://umanitoba.ca/faculties/medicine/units/community_health_sciences/)

**Academic Staff:** Please refer to the website for Faculty information: [http://umanitoba.ca/faculties/medicine/units/community\\_health\\_sciences/](http://umanitoba.ca/faculties/medicine/units/community_health_sciences/)



CHS offers broad, multidisciplinary, graduate training at the Diploma, Master and Doctoral levels in the concepts and methods of the population-based health sciences and their application in the practice of public health and preventive medicine. In addition to training in the core areas of epidemiology, biostatistics and the social sciences as applied to health (anthropology, economics, sociology and political science), students have an opportunity to obtain advanced training in internationally recognized research programs conducted by specialized units within the department such as the Manitoba Centre for Health Policy, the Centre on Aging, the Section of First Nations, Metis and Inuit Health and the Centre for Global Public Health. As a result graduate students have the opportunity to access both internationally regarded researchers and award winning teachers.

The Doctoral (Ph.D.) program is designed to produce individuals who will teach in the community health sciences; train other researchers, design and execute major research projects; and serve as senior advisors and consultants in the area of health care policy and planning.

In contrast, our two Master's programs, the Master of Science (M.Sc.) and Master of Public Health (M.P.H.) degrees, are intended to satisfy the demand of local, regional, provincial and federal health departments for trained community health professionals. Both Master's level programs provide core training in epidemiology, public health, health policy planning, and health administration. The M.Sc. program has a research focus requiring completion of a thesis while the M.P.H. program has a field-placement / practicum integrating applied public health concepts.

The Diploma in Population Health (Dip.P.H.) is a course-based program intended to provide senior clinicians in teaching hospitals and managers in provincial and regional health authorities with core knowledge and skills in the population health sciences which will allow them to become more effective consumers and utilizers of health research data.

Program graduates currently occupy faculty positions in medical, dental, nursing and medical rehabilitation schools in Canada, the United States and overseas. Others work in government at the provincial and federal levels as medical officers of health, and as directors of research and planning programs. Some graduates have returned to primarily clinical positions in a variety of health disciplines while others have become independent consultants in health services planning and evaluation.

#### Fields of Research

Researchers in the department are involved in a wide range of research activities in community health. Many have achieved national, and in some cases, international reputation in their fields. Particular areas of strength are health services research, health policy planning, northern and First Nations, Inuit and Metis health, occupational and environmental health, women's health, disability issues, aging and health, the epidemiology of infectious diseases and the epidemiology of chronic diseases.

Researchers are also actively working in areas such as health promotion, HIV/AIDS prevention, medical anthropology, health education and social determinants of health. In addition, several researchers in the department have active interests in Global Health with projects currently running in India and Kenya.

The department has researchers with high levels of expertise in both qualitative and quantitative research methodologies. The opportunity for graduate students to work with researchers in mixed methods research paradigms represents a major strength of the program.

#### Research Facilities

The ability to seamlessly interact with internationally regarded research groups within the department creates an extremely rich graduate research environment. Through the Manitoba Centre for Health Policy graduate students have potential access to administrative health databases which are unique in Canada.

The department maintains a graduate student computer resource centre supporting a broad range of statistical, graphical and information processing software. The department also maintains a suite of carrels that provide a dedicated study centre for its graduate students.

#### Ph.D. in Community Health Sciences, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. The Ph.D. program is open to individuals with thesis-based M.A. and M.Sc. degrees. A thesis advisor must be identified at the time of application.

The deadline for receipt of the application form and supporting documents is early January.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. Eighteen credit hours of coursework from 7000-level courses (nine from required courses, nine from electives), candidacy examination and thesis. (In addition, fifteen credit hours of prerequisite courses, or their equivalents, must have been completed before entering the program or in the first year).

Second language requirement: none

Expected time to graduation: three years full-time, five years part-time

#### M.Sc. in Community Health Sciences Admission



Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. The M.Sc. program is open to individuals with four year degrees in the health sciences or professions or with honours degrees in the biological or social sciences.

The deadline for receipt of the departmental application form and supporting documents is early January.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. Twenty-four credit hours of course work from 7000-level courses (twelve from required courses, three from methods and nine from electives) and thesis.

Second language reading requirement: none

Expected time to graduate: two years full-time, four years part-time

#### M.P.H. in Community Health Sciences Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. The M.P.H. program is open to individuals with four-year degrees in the health sciences or allied health professions or with honours degrees in the biological or social sciences, and a minimum of three years experience working in a field of health.

The deadline for receipt of the departmental application form and supporting documents is early January.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. The M.P.H. program consists of completion of core courses, elective courses and a supervised field placement component. Thirty credit-hours from 7000-level courses will be required for completion of the degree: twelve credit hours from core courses and eighteen credit hours from elective courses. The field placement is a zero credit hour component.

Second language reading requirement: none

Expected time to graduate: two years full-time, four years part-time

#### Diploma in Population Health, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. The Dip.P.H. program is open to individuals with four year degrees in the health sciences or professions or with honours degrees in the biological or social sciences.

The deadline for receipt of the departmental application form and supporting documents is early January.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Eighteen credit hours of course work from 7000-level courses (nine from required courses, nine from electives),

Second language requirement: none

Expected time to graduation: one year full-time

#### CHSC 7130 Methods in Health Services Research and Evaluation Cr.Hrs.3

(Formerly 093.713) Examines the process of planning and conducting research and evaluation to assess health services with an emphasis on the methods by which a question may be translated into a testable hypothesis, and the specification of a research plan that will produce results of maximum internal and external validity.

#### CHSC 7200 Health and Health Care in Developing Countries Cr.Hrs.3

(Formerly 093.720) The course will focus on the patterns of mortality and morbidity in developing countries and the organization of health care services. Social, cultural, and economic development will be related to health and health services.

#### CHSC 7210 Epidemiology of Women's Health Cr.Hrs.3

(Formerly 093.721) This course will deal with problems and concerns particular to women's health. The topics will be approached from an epidemiological perspective but use will be made of materials from health economics, evaluation research, medical sociology and anthropology.

#### CHSC 7220 Health and Health Services of Native People Cr.Hrs.3

(Formerly 093.722) This course provides a detailed review of the health status and the determinants of health of Canada's native people.

#### CHSC 7270 Epidemiology of Chronic (Non-Cancer) Diseases Cr.Hrs.3

(Formerly 093.727) The objective is to study the natural history of chronic diseases including the distribution of diseases, risk and prognostic factors, rationale and strategies for prevention. The methodological issues concerning the investigation of severe disease are also discussed. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752).



**CHSC 7290** Economic Evaluation of Health Care Cr.Hrs.3 (Formerly 093.729) The objectives of this course are to enable students to understand economic evaluation methodologies (cost-effectiveness, cost-benefit, cost-utility analysis) as applied to health care and to familiarize them with the applied literature on economic evaluation of health care. Prerequisite: permission of instructor.

**CHSC 7300** Health Policy and Planning Cr.Hrs.3 (Formerly 093.730) This course defines health policy and describes the planning and decision-making process. Case studies will be used to illustrate and critique the substance, process and outcome of policy papers that address contemporary policy issues. Prerequisite: permission of instructor.

**CHSC 7310** Epidemiology of Health Care Cr.Hrs.3 (Formerly 093.731) This course will discuss the advantages and disadvantages of using large administrative data bases for research purposes. Substantive topics dealt with include: regional variations in provision and utilization of health care, short- and long-term outcome studies, individual physician behaviour, and technology assessment. Policy implications are considered. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752) or equivalent and permission of instructor.

**CHSC 7320** Organization and Financing of the Canadian Health Care System Cr.Hrs.3 (Formerly 093.732) Students will study the historical development and current structure of the Canadian health care system and relate its development to changes in social and political factors. The course provides an economic perspective on current policy issues in the organization, financing, and delivery of health care in Canada.

**CHSC 7330** Cultural Perspectives on Illness and Medical Practice Cr.Hrs.3 (Formerly 093.733) The objective of this course is to make students aware of the ways in which disease, illness, and medical practice are socially and culturally mediated. The course will examine cultural influences on the experience and expression of illness and consider the medical practitioner's role in the development and provision of culturally responsive health care. Prerequisite: permission of instructor.

**CHSC 7360** Clinical Trials Cr.Hrs.3 (Formerly 093.736) The Randomized Clinical Trial is the only true experiment in clinical research. This course is intended to give students a detailed knowledge of the design and implementation of RCTs. Students will participate in a qualitative review of RCTs. Prerequisites: a minimum grade of "B" in CHSC 7520 (or 093.752), CHSC 7470 (or 093.747), CHSC 7480 (or 093.748) or equivalents.

**CHSC 7380** Prevention and Health Cr.Hrs.3 (Formerly 093.738) The course will cover frameworks used in formulating preventive strategies. Topics will include risk factor assessment, screening, health education, legislation, litigation, lifestyle and prevention. Actual case studies will be used. Prerequisite: CHSC 7520 (or 093.752) and CHSC 7530 (or 093.753).

**CHSC 7390** Health Promotion Cr.Hrs.3 (Formerly 093.739) An examination of theories, principles, practices and settings for health promotion. Prerequisite:

permission of instructor.

**CHSC 7400** Directed Readings I: In Epidemiologic Methods Cr.Hrs.3 (Formerly 093.740) An opportunity for advanced students to acquire knowledge in a defined and specific area of interest. Prerequisites: permission of instructor and Graduate Program Director.

**CHSC 7410** Directed Readings: II - In Epidemiology Cr.Hrs.3 (Formerly 093.741) An opportunity for advanced students to acquire knowledge in a defined and specific area of interest. Prerequisite: permission of instructor and Graduate Program Director.

**CHSC 7430** Seminars on Advanced Topics: II - In Methods of Health Care Cr.Hrs.3 (Formerly 093.743) Seminars dealing with current research issues, emerging methodologies and analytical techniques will be offered for advanced students. Prerequisite: permission of instructor.

**CHSC 7450** Epidemiology of Communicable Diseases Cr.Hrs.3 (Formerly 093.745) Overview of epidemiological principles in communicable disease investigation and prevention and specific issues in controls of certain specific communicable diseases of public health importance in Canada will be introduced. Prerequisite: permission of instructor. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752).

**CHSC 7460** Environmental and Occupational Health Cr.Hrs.3 (Formerly 093.746) The aim of the course is to acquaint the student with the role of the environment (general and specifically working) as the determinant of health. The content of the course will be presented in the form of lectures, seminars, and field visits. Prerequisite: permission of instructor.

**CHSC 7490** Empirical Perspectives on Social Organization and Health Cr.Hrs.3 (Formerly 093.749) This course will focus on a selected review of the epidemiological literature which has integrated social factors in the investigation of the distribution of health and illness in society. The course will review a selection of important empirical studies investigating the roles played by social, psychological and economic status factors in determining health and illness. Emphasis will be placed on identifying the central theoretical and methodological approaches to defining and measuring socioeconomic status in this literature. Prerequisite: permission of instructor.

**CHSC 7510** Current Topics in Community Health Cr.Hrs.3 (Formerly 093.751) Focus on current issues and topics in community health, particularly as they relate to Manitoba and to Canada. Emphasis will be placed on current literature and ongoing research to examine emerging policies and programs within health care and social development. Prerequisite: basic courses in Epidemiology and Statistics. Prerequisites: a minimum grade of "B" in CHSC 7520 (or 093.752) and CHSC 7470 (or 093.747) and CHSC 7320 (or 093.732).



**CHSC 7520** Principles of Epidemiology 1 Cr.Hrs.3  
(Formerly 093.752) This course will introduce the basic concepts and methods of epidemiology, including the definition and measurement of health status and health determinants in populations, assessing health risks and inferring causation, and issues in the design and analysis of population health studies.

**CHSC 7530** Principles in Epidemiology II Cr.Hrs.3  
(Formerly 093.753) This course follows the Principles of Epidemiology I and discusses the applications of epidemiologic principles in public health practice, including the investigations of epidemics, disease surveillance, clinical applications, evaluation of health programs, and the planning of preventive programs. Students will also receive instruction in microcomputer applications and use of EPI-INFO software for data entry, analysis and presentation. Corequisite: CHSC 7480. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752) and in CHSC 7470 (or 093.747)..

**CHSC 7540** Advanced Epidemiology Cr.Hrs.3  
(Formerly 093.754) Advanced epidemiologic research methods focusing on selected epidemiological issues (bias, confounding, matching, etc.). Discussion will be directed to both epidemiological and statistical considerations to find the optimal solution to a research problem. Prerequisites: a minimum grade of "B" in CHSC 7520 (or 093.752), CHSC 7530 (or 093.753), CHSC 7280 (or 093.728).

**CHSC 7550** Observational Epidemiology Cr.Hrs.3  
(Formerly 093.755) Intermediate epidemiologic research methods focusing on case-control and cohort studies, with discussion on issues relating to planning and design, implementation, and data analysis. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752) and CHSC 7530 (or 093.753) and CHSC 7470 (or 093.747) and CHSC 7480 (or 093.748)..

**CHSC 7560** Epidemiology of Cancer Cr.Hrs.3  
(Formerly 093.756) This course introduces the magnitudes, risk factors and prevention strategies of cancer. It focuses on current knowledge related to the etiology of cancer, medical interventions and potential for prevention. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752).

**CHSC 7610** Advanced Topics in Community Health  
1 Cr.Hrs.1.5  
Special advanced research topics in Community Health Sciences.

**CHSC 7620** Advanced Topics in Community Health  
2 Cr.Hrs.1.5  
Special advanced research topics in Community Health Sciences.

**CHSC 7710** Social Aspects of Aging Cr.Hrs.3  
This course is an advanced seminar designed to examine current social issues in aging. The course is organized around selected topics related to aging. Where possible, the Canadian experience will be compared to international trends and diversity will be highlighted. The first section is a review of the field of gerontology, ageism, demographic trends, theoretical perspectives and methods and the second section explores contemporary social issues. This course is a required course for the Graduate Specialization in Aging Certificate.

**CHSC 7720** Health and Aging Cr.Hrs.3  
This course is an advanced seminar designed to examine health and health care issues in aging. Where possible, the Canadian (or Manitoban) experience will be highlighted. Key topics in the health domain will be covered, such as frailty, mental health, and dementia. The provision of care for older adults will also be covered, focusing on both the formal care system, as well as informal care providers. This course is a requirement for the Graduate Specialization in Aging.

**CHSC 7730** Topics in Health Services Research Cr.Hrs.3  
This course will expose students to select health services research topics that are particularly relevant in Manitoba and Canada. Students are expected to actively engage in seminars led by health services researchers and decision-makers, and also provide informative presentations in their own area of research. Students will also gain knowledge about various communication and knowledge translation strategies.

**CHSC 7740** Advanced Qualitative Methods Cr.Hrs.3  
The purpose of this course is to provide students with fundamental aspects related to qualitative research methods and analysis. By the end of the course, students should have an understanding of the principles and practices involved in: the application of different social theories to qualitative methods; designing a qualitative research study; various ways of collecting qualitative data and analyzing written texts; ways of integrating qualitative methods in a mixed methods design; developing different products for knowledge exchange activities; and 'hands-on' experience in doing qualitative analysis using qualitative software.

**CHSC 7810** Biostatistics for the Health and Human Sciences  
1 Cr.Hrs.3  
An introduction to statistical ideas and techniques for health sciences and human research. Describing data, patterns in data, the Normal distribution. Principles of estimation and principles of hypothesis testing. Principles and practice of the major statistical tests (t tests, analysis of variance, Chi squared tests, correlation and regression). Nonparametric statistical techniques. The use of statistical software to carry out statistical analyses. Analytic decision strategies.

**CHSC 7820** Biostatistics for Community Health Sciences  
1 Cr.Hrs.3  
The course will cover techniques of research design and analysis for community health researchers. Topics include: principles of experimental design, study size determination, statistical software as an analytical tool, techniques for the analysis of continuous outcomes, analysis of variance for multi-way, factorial and split-unit experiments, and multiple regression and general linear models. Introduction to more advanced statistical methods including logistic regression and survival models. Prerequisite: Undergraduate course in statistics.

**CHSC 7830** Biostatistics for Community Health Sciences  
2 Cr.Hrs.3  
This course will cover techniques for the analysis of complex data sets involving continuous, categorical and time-related outcome variables. Principles of statistical modeling. The behaviour of non-continuous variables. Categorical outcome variables and logistic regression. Poisson outcome variables and Poisson regression. Time-dependent outcomes, survival analysis and proportional hazards regression. Prerequisite:



CHSC 7820 with a grade of B+ or better.

**CHSC 7860** Methods and Concepts for Community Health Sciences Cr.Hrs.3

This course is designed to provide both a practical and theoretical introduction to qualitative, quantitative, and multi-method approaches used in health research. The emphasis in the course will be on applied research, consistent with the characteristics of the Department of Community Health Sciences as a whole.

**CHSC 7870** Health Survey Research Methods Cr.Hrs.3

Students critically examine the use of health survey methodology within epidemiology. They also learn to apply survey methodology, as a means to gain a strong appreciation of the reflective, theoretical and analytical thinking required to successfully design and implement epidemiological health surveys. Prerequisites: CHSC 7820 and CHSC 7520.

## Computer Science

**Head:** John Bate

**Campus Address/General Office:** E2-445 EITC

**Telephone:** (204) 474 8313

**Fax:** (204) 474 7609

**Email Address:** [hermisto@cs.umanitoba.ca](mailto:hermisto@cs.umanitoba.ca)

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**Academic Staff:** Please refer to website for Faculty information: <http://www.cs.umanitoba.ca/>

The department offers Master's and Ph.D. programs at the graduate level, which cover many areas of computer science. The department also participates in the Master's of Mathematical, Computational and Statistical Sciences program offered through the Institute of Industrial Mathematical Sciences. Graduates find employment in industry and academia.

### Fields of Research

The department has people working in the areas of robotics, computer vision, intelligent agents, multi-agent systems, multimedia and hypermedia, bioinformatics, biomedical and health informatics, self-organizing systems, medical information systems, software engineering and integration, human-computer interaction, networks, parallel and distributed systems, databases, data mining, networks, multiplayer online games, data structures, algorithms, combinatorics and combinatorial designs, graph theory, artificial intelligence, computer graphics and curve design, computer-aided geometric design, computational finance, grid computing, wireless sensor networks, and pervasive computing. More information about specific individuals and their current research work can be found on the department's web site.

### Research Facilities

Each graduate student will have a personal study space in an appropriate departmental research laboratory, and access to laser printers, mail, photocopying, a fax machine, and a graduate student lounge.

Computing facilities for research include a large variety of desktop computers as well as access to large clusters within the department, at the University of Manitoba, and across Western Canada via the WestGrid II network.

### M.Sc. in Computer Science, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Students may be admitted to the Master's program if they hold an Honours Bachelor's degree in Computer Science and if they present a suitable selection of courses. Admission is not guaranteed and each application will be individually considered by the department's Graduate Studies Committee.

Students can also be admitted to the Master's program upon successful completion of their pre-Master's program.

### Application Deadlines

The Department of Computer Science allows students to begin their program in September or January. For admission for each of these start dates, Canadian/U.S. students should send their applications with complete supporting documentation to the Department of Computer Science no less than three (3) months before the intended start date. All other students should have their applications with complete supporting documentation received by the Department of Computer Science no later than eight (8) months before the intended start date.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students must complete 12 credit hours of coursework and a thesis. All credit hours must be at the 7000 level and must include the 0-credit-hour Research Methodologies course. See the departmental Graduate Supplemental Regulations (available on the department's web site). Students must consult with their departmental advisor prior to deciding on courses. The courses listed below will not all be offered in any one particular year.

Second language reading requirement: none

Expected time to graduate: two years

### Ph.D. in Computer Science, Admission



Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. A candidate must normally complete an M.Sc. degree before entering the Ph.D. program. Individual qualifications other than this will be considered.

### Application Deadlines

The Department of Computer Science allows students to begin their program in September or January. For admission for each of these start dates, Canadian/U.S. students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than three (3) months before the intended start date. All other students should have their applications with complete supporting documentation received by the Faculty of Graduate Studies no later than eight (8) months before the intended start date.

### Program Requirements

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Students must complete a minimum of 12 credit hours of coursework and a thesis. All credit hours must be at the 7000 level. See the departmental Graduate Supplemental Regulations (available on the department's web site). Students must consult with their departmental advisor prior to deciding on courses. The courses listed below will not all be offered in any one particular year.

Second language reading requirement: none

Expected time to graduate: four years

#### COMP 7210 Research Methodologies Cr.Hrs.3

This course explores the research process in general and the resources for research in computer science. Traditional research approaches and use of emerging technology will be discussed. Attendance at department seminars and classes is required.

#### COMP 7570 Advanced Topics in Computer Science 1 Cr.Hrs.3

(Formerly 074.757) Topics of current research interest in areas of computer science, available on an occasional basis, subject to the interests and availability of faculty. Prerequisite: written consent of instructor.

#### COMP 7600 Graduate Workterm I Cr.Hrs.0

Work assignment in business, industry, or government for students registered in the Computer Science Graduate Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. Graded Pass/Fail.

#### COMP 7700 Advanced Design and Analysis of Algorithms Cr.Hrs.3

COMP 7700 Advanced Design and Analysis of Algorithms Cr.Hrs.3 (Formerly 074.770) An advanced course covering models of computation, advanced analysis techniques, lower

bounds, NP-completeness (from an algorithmic viewpoint), with applications of these techniques to various areas.

Prerequisites: COMP 3170 (or 074.317) or equivalent or written consent of instructor.

#### COMP 7720 Advanced Topics in Algorithms Cr.Hrs.3

(Formerly 074.772) Topics of current research interest in advanced algorithms. Possible topics include string matching, data compression, computational geometry, probabilistic algorithms; subject to the interests and availability of faculty. Prerequisites: COMP 3170 (or 074.317) or equivalent or written consent of instructor.

#### COMP 7750 Advanced Topics in Computation Theory Cr.Hrs.3

(Formerly 074.775) Topics of current research interest in computation and complexity theory. Possible topics include decidability and complexity theoretic issues in parallel computation, cryptography, graph theory, or number theory, subject to the interests and availability of faculty. Prerequisite: written consent of instructor.

#### COMP 7760 Algorithmic Methods in Number Theory and Combinatorics Cr.Hrs.3

(Formerly 074.776) Large scale problems arising in combinatorics and number theory; practicable algorithms for solution of such problems. Computer implementation of these algorithms. Prerequisite: written consent of instructor.

#### COMP 7770 Coding Theory Cr.Hrs.3

(Formerly 074.777) Algebraic background of coding theory. Theory of linear codes. Hamming, Golay, Reed-Miller, Macdonald, and Hadamard codes. Structure of finite fields. Application to cyclic and Bose Chaudhuri codes. Decoding algorithms and error-correcting bounds. Specialized topics. Prerequisite: written consent of instructor. COMP 7780

#### Queuing Theory and Performance Evaluation Cr.Hrs.3

(Formerly 074.778) Theory and application of queuing systems applied to problems of computer systems performance. Investigation of deterministic and stochastic models of single and multiple queuing systems using analytical, numerical, and simulation techniques. Performance evaluation methods for computer systems and communications networks. Prerequisites: STAT 1000 (or 005.100) or equivalent or written consent of instructor.

#### COMP 7780 Queuing Theory and Performance Evaluation Cr.Hrs.3

(Formerly 074.778) Theory and application of queuing systems applied to problems of computer systems performance. Investigation of deterministic and stochastic models of single and multiple queuing systems using analytical, numerical, and simulation techniques. Performance evaluation methods for computer systems and communications networks. Prerequisites: STAT 1000 (or 005.100) or equivalent or written consent of instructor.

#### COMP 7800 Graduate Workterm II Cr.Hrs.0

Work assignment in business, industry, or government for students registered in the Computer Science Graduate Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. Graded Pass/Fail. Prerequisite: COMP 7600.

#### COMP 7810 Computer Networks Cr.Hrs.3

(Formerly 074.781) A selection of current research topics



from such areas as network modeling and analysis, packet switching, circuit switching, non-switched nets, frame relay, cell relay, ATM, integrated voice/video/data networks, B-ISDN, and emerging technologies. Prerequisites: STAT 1000 (or 005.100) and COMP 4300 (or 074.430) or equivalents or written consent of instructor.

**COMP 7820** Advanced Topics in Computer Architecture Cr.Hrs.3

(Formerly 074.782) Topics of current research interest from such areas as computer design and architecture, distributed systems, multiprocessor and parallel systems, computer networks, specialized architectures, and VLSI; subject to the interests and availability of faculty. Prerequisites: written consent of instructor.

**COMP 7840** Operating Systems Design and Implementation Cr.Hrs.3

(Formerly 074.784) A discussion of the current research issues in operating systems including, but not limited to: distributed operating systems, multiprocessor operating systems, and other application-specific operating systems such as those for mobile computing. Prerequisites: COMP 3430 (or 074.343) or equivalent or written consent of instructor.

**COMP 7850** Advances in Parallel Computing Cr.Hrs.3

(Formerly 074.785) This course introduces advanced research topics in parallel architectures, parallel programming, parallelizing compilers, runtime systems, and parallel I/O. Prerequisite: written consent of instructor.

**COMP 7860** Advanced Topics in Computer Systems Cr.Hrs.3

(Formerly 074.786) Topics of current research interest in database and operating systems. Possible topics include: operating systems, parallel systems, real-time systems, networks, and database systems; subject to the interests and availability of faculty. Prerequisite: written consent of instructor.

**COMP 7890** Advanced Topics in Languages and Software Cr.Hrs.3

(Formerly 074.789) Topics of current research interest in the areas of programming languages or software engineering. Possible topics include program language design and implementation, visual programming languages, formal specification techniques, and software verification and validation; subject to the interests and availability of faculty. Prerequisite: written consent of instructor.

**COMP 7900** Graduate Workterm III Cr.Hrs.0

Work assignment in business, industry, or government for students registered in the Computer Science Graduate Cooperative Option. Requires submission of a written report covering the work completed during the four-month professional assignment. Graded Pass/ Fail. Prerequisite: COMP 7800.

**COMP 7910** Advanced Graphics Cr.Hrs.3

(Formerly 074.791) This course will focus on two major advanced topics in computer graphics: the principles and properties of lighting models such as Phong shading, ray tracing and radiosity; and a selection of visualization and modelling techniques. Prerequisites: COMP 4490 (or 074.449) or equivalent or written consent of instructor.

**COMP 7920** Advanced Topics in Graphics and Human Interfaces Cr.Hrs.3

(Formerly 074.792) Topics of current research interest in advanced graphics and human interfaces, chosen from such areas as intelligent user interfaces, user modelling, user interface design, visualization, computer animation, advanced multimedia, and computer-based training; subject to the interests and availability of faculty. Prerequisite: written consent of instructor.

**COMP 7940** Machine Learning Cr.Hrs.3

(Formerly 074.794) This course examines topics in machine learning. Topics will be chosen from: statistical learning, symbolic learning, neural networks, and genetic algorithms. Prerequisites: COMP 3190 (or 074.319) or equivalent or written consent of instructor.

**COMP 7950** Advanced Topics in Artificial Intelligence Cr.Hrs.3

(Formerly 074.795) Topics of current research interest in artificial intelligence chosen from such areas as: expert systems, knowledge representation, intelligent systems, planning systems, multi-agent systems, symbolic logic, knowledge engineering, and automated reasoning; subject to the interests and availability of faculty. Prerequisites: COMP 3190 (or 074.319) or equivalent or written consent of instructor.

**COMP 7960** Image Processing Cr.Hrs.3

(Formerly 074.796) A detailed study of the methods used for image processing including: image quantization, transformations, enhancement, and analysis. Prerequisites: COMP 4490 (or 074.449) or equivalent or written consent of instructor.

**COMP 7970** Curves and Surfaces in Computer Graphics Cr.Hrs.3

(Formerly 074.797) Algorithms and techniques for curve and surface generation, representation, and display in an interactive computer graphics environment. Discussion of applications to computer-aided design and computer-aided geometric design. Prerequisites: COMP 4490 (or 074.449) or equivalent or written consent of instructor.

**COMP 7980** Advanced Topics in Scientific and Numerical Computing Cr.Hrs.3

(Formerly 074.798) Topics of current research interest in scientific and numerical computing chosen from areas such as geometric modelling, special splines, problems related to medical imaging, or other topics subject to the interests and availability of faculty. Prerequisites: COMP 7910 (or 074.791) or COMP 7920 (or 074.792) or written consent of instructor.

## Curriculum, Teaching and Learning

For information about graduate programs in the following units: [Université de Saint-Boniface, Education \(Doctoral\)](#), or [Educational Administration, Foundations and Psychology](#) contact the Université de Saint-Boniface directly.



## Curriculum, Teaching and Learning ,

**Head:** (and Graduate Chair) F. Morin

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The Department of Curriculum, Teaching and Learning offers the Master of Education Program with specializations in language and literacy; second language education; and studies in curriculum, teaching and learning (an area that includes art, drama and music; curriculum studies; early years curriculum; educational technology; language and literacy curriculum; mathematics education; physical education/health; science education; social studies education; second language education; and technology education).

### Fields of Research

Department members provide leadership in a variety of areas including curriculum development, curriculum reform and curriculum theorizing; teacher inquiry, professional development and teacher practice; teaching and learning within and across individual curriculum areas and streams (Early, Middle and Senior Years); language and literacy development; and second language education.

### M.Ed. in Curriculum, Teaching and Learning, Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, the Department of Curriculum, Teaching and Learning has the following admission application deadline dates and admission requirements:

For sessions starting	Canadian applicants	International applicants including US
January	October 1	none
May	None	none
July	February 1	none
September	May 1	January 15

Applicants must possess:

- *For specializations: Language & Literacy and Studies in Curriculum Teaching and Learning*, a four-year Bachelor of Education degree, or a two-year After Degree Bachelor of Education, or a three-year undergraduate degree which includes teacher training, plus a Post Baccalaureate Diploma in Education (PBDE) with 24-30 credit

hours which includes at least 18 credit hours at the 5000 level or if taken outside of Education, 24-30 credit hours of upper level coursework which includes at least 12 credit hours but preferably 18 credit hours at the 4000 level. The total number of credit hours completed including the degree should be 120 credit hours, or an equivalent degree from an academic institution recognized by the Faculty of Graduate Studies; *For Second Language Education specialization*, an acceptable four-year equivalent undergraduate degree from an academic institution recognized by the Faculty of Graduate Studies, or a three-year undergraduate degree, plus a PBDE with 24-30 credit hours which includes at least 18 credit hours at the 5000 level or if taken outside of Education, 24-30 credit hours of upper level coursework which includes at least 12 credit hours but preferably 18 credit hours at the 4000 level. The total number of credit hours completed including the degree should be 120 credit hours, or an equivalent degree from an academic institution recognized by the Faculty of Graduate Studies.

- a grade point average of 3.0 or better in the last 60 credit hours of university coursework;
- normally, two years of relevant work experience; and
- appropriate academic and/or professional background for the program area and concentration. Consult with Department Head for further information.

For individuals who graduate from the Certificate in Adult and Continuing Education (CACE) , University of Manitoba complete the following courses:

EDUA 1560 Adult Learning and Development (3)

EDUA 1570 Foundations of Adult Education (3)

EDUA 1580 Program Planning in Adult Education (3)

EDUA 1590 Facilitating Adult Education (3)

and an additional 100 hours of elective credit through courses, seminars, and workshops. The Faculty of Graduate Studies recognizes a complete CACE program as 15 credit hours towards the admission requirements for the M.Ed.; that is, giving 12 credit hours for the four core courses completed with a grade of 'B' or better and 3 credit hours (non assessable) for the 100 hours of elective study.

Individuals with a three year undergraduate degree and the four CACE courses listed above must complete an additional 12 credit hours of senior level courses (i.e., 5000 level (Post-Baccalaureate Diploma in Education (PBDE) courses, 1000 or 2000 level B.Ed. courses, or courses at the 3000 level or above in other faculties) to have the 24 credit hours that are the minimal requirements for satisfying the "honours degree or equivalent" admission requirement. Those with the completed CACE would require an additional 9 credit hours of senior level courses.



Applicants should note that admission to the M.Ed. program is competitive. A number of factors are taken into account in arriving at an admission decision: (1) the capacity of the department to provide the program of study requested by the applicant; (2) the applicant's previous academic background and achievement; (3) the referees' assessment of the applicant; (4) the capacity of the department to provide the applicant with an advisor in the program area; and (5) the applicant's Statement in Support of their application, including relevant professional experience.

### Transfer of Credit

The granting of advanced credit is subject to the regulations of the Faculty of Graduate Studies and subject to approval of the advisor and department head.

### Program Requirements

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this *Calendar*. The M.Ed. in Curriculum, Teaching and Learning has a thesis-based route and a course-based route with an oral defense. The M.Ed. comprehensive route at the University of Manitoba is typically a terminal degree. That is, it is insufficient, in number and of itself, as evidence of research capacity for admission into the Ph.D. program in Education at the University of Manitoba.

The following program requirements apply to all specializations in the Department of Curriculum, Teaching and Learning. Specific specialization requirements are listed under each specialization below.

M.Ed. programs have a maximum completion time of six years from the date of first registration. Not all courses are offered every year. The graduate course offering schedule is posted on the Faculty's website: <http://umanitoba.ca/faculties/education/media/graduate-future-courses.pdf>. Although we offer many courses yearly, most of our courses are offered in the evening and those wishing to study full-time should consult with the Department Head.

Second Language Reading Requirement: None

Expected Time to Graduate: full-time: 2 to 3 years; part-time: 4 to 5 years

### Program by Coursework and Thesis

- A minimum of 18 credit hours of coursework. At least 12 credit hours must be at the 7000 level or equivalent. The remaining 6 credit hours may be at the 5000 level or above, in the Faculty of Education and/or at the 3000 level or above in other faculties.
- Students must take 3 credit hours of research methodology at the 7000 level in Education or 3000 level or above in other faculties.
- Upon entry into the program, a student will be assigned a program advisor who is not necessarily

the thesis advisor. Students who have chosen to follow the thesis-based route should contact the head of department to identify a faculty member with expertise in the proposed specialization and who is available to supervise their thesis.

### Program by Coursework and Comprehensive Option (either Examination or Project) (Course-based)

- A minimum of 30 credit hours of coursework. At least 18 credit hours must be at the 7000 level, which may include EDUB 7540, or equivalent. The remaining 12 credit hours may be at the 5000 level or above in the Faculty of Education and/or at the 3000 level or above in other faculties.
- All coursework plus comprehensive option programs require a culminating activity and an oral defense. This culminating requirement may be met through taking a comprehensive examination or carrying out a research project. The research project may take a variety of forms including a research review, a small-scale study, or a curriculum/instruction application project. In some cases, the research project may include the student taking EDUB 7540 Final Seminar in Curriculum, Teaching and Learning to facilitate the development of the project. Students should contact and discuss with their advisors the specific requirements of both the examination and the research project activities.

### Studies in Curriculum, Teaching and Learning Specialization,

The Master of Education in Studies in Curriculum, Teaching and Learning includes a range of potential concentrations: art, drama, music; curriculum studies; early years curriculum; educational technology; language and literacy curriculum; mathematics education; physical education/health; science education; social studies education; second language education; and technology education. In consultation with their faculty advisors, students will be encouraged to create a program of study that addresses their own interests in a particular curricular field and which enhances the students' understanding of curriculum and its intents and effects. The aim of the program is to develop individuals who are informed, critical, and reflective about curriculum theory and practice in their particular area of concentration. In order to support this aim, courses are designed to provide graduate students with the requisite skills to conduct and to understand research in a variety of formats and paradigms.

Admission and Program requirements are those listed above. Specific course requirements are as follows:

- Required courses: EDUA 5800, EDUB 7550
- Thesis-based students select 3 credit hours from: EDUB 7560, EDUB 7420. Course-based students are required to take both courses.

### Language and Literacy Specialization



Language and Literacy is a broad field encompassing a number of major sub-fields from pre-school to post-secondary levels. The sub-fields include developmental reading, clinical reading, composition studies, rhetoric, oral language development, children's and adolescent literature, response to literature, the language arts associated with listening, representing, viewing, spelling, and handwriting instruction, along with instruction in comprehension. The purpose of the program is to strengthen practitioners' theoretical understanding of one or more of these sub-fields, and to develop skills that will enable them to conduct independent research into language and literacy practices in their chosen area of concentration. Students in the program can anticipate experiences that range from general courses in curriculum development and implementation to specialized courses specific to their own needs and interests.

Admission and Program requirements are listed above. Specific course requirements are as follows:

- Required courses: EDUB 7530 and EDUA 5800
- Thesis-based students will select 3 credit hours and course-based students will select 6 credit hours from: EDUB 7070, EDUB 7100, EDUB 7180
- In addition, thesis-based students will select 6 credit hours and course-based students will select 18 credit hours from: EDUB 7060, EDUB 7070, EDUB 7090, EDUB 7100, EDUB 7110, EDUB 7120, EDUB 7150, EDUB 7180, EDUB 7190, EDUB 7290, EDUB 7420, EDUB 7550, EDUB 7560. Course-based students may also select from: EDUB 7330, EDUB 7540.

### Second Language Education Specialization

The purpose of the Master's in Second Language Education (SLE) Program is to further the knowledge of experienced ESL teachers. Courses are designed to enable teachers to reflect on their teaching practices in light of influential and relevant research in second language acquisition/learning, curriculum theory and development, and SLE pedagogy. Students accepted into the program will be introduced to the research methodologies employed in educational research and in SLE, and will have the opportunity to develop expertise in one or more research methodologies.

Admission and Program requirements are those listed above. Specific course requirements are as follows:

Required courses: EDUB 7210, EDUB 7220, EDUB 7580, EDUA 5800.

In addition, thesis-based students will select 3 credit hours at the 7000 level from e.g., EDUB 7550, EDUB 7420, EDUB 7270, EDUA 7270, EDUA 7280; EDUA 7420, and course-based students will select 18 credit hours with a minimum of 9 credit hours at the 7000 level from e.g.: EDUB 5510, EDUB 5520, EDUB 5530, EDUB 5540, EDUB 5580, EDUB 7070, EDUB 7180, EDUB 7330, EDUB 7420, EDUB 7540, EDUB 7550, EDUB 7560, EDUA 7270/7280, EDUA 7420, or courses from the Faculties of Education or Arts of the University of Manitoba or other universities, in particular

those within the Western Deans Agreement, and approved by the program advisor and the department head.

### Curriculum, Teaching and Learning- Research and Evaluation

**EDUA 7010** Educational Administration as a Field of Study and Practice Cr.Hrs.3

(Formerly 129.701) An overview of educational administration, focusing on a review of some of the main intellectual traditions in the study of educational administration and on an analysis of some of the forces which shape administrative practice. Not to be held with EDUA 7011 (or 129.701) or the former 116.731.

**EDUA 7020** Politics of Education Cr.Hrs.3

(Formerly 129.702) A review of the political features of educational organizations, with emphasis on value systems, community power structures, local government, and political change. Not to be held with EDUA 7021 (or 129.702) or the former 116.702.

**EDUA 7030** Educational Finance Cr.Hrs.3

(Formerly 129.703) Study of economic and financial aspects of education, with emphasis on costs and analysis of expenditures; sources and types of revenue; productivity and efficiency, planning and budgeting. Not to be held with EDUA 7031 (or 129.703) or the former 116.703.

**EDUA 7040** Legal Aspects of Education Cr.Hrs.3

(Formerly 129.704) Studies of legal issues in education. Not to be held with EDUA 7041 (or 129.704) or the former 116.704.

**EDUA 7050** Theoretical Perspectives on Educational Administration Cr.Hrs.3

(Formerly 129.705) A study of the main currents of organization theory and administrative thought and their implications for the study and administration of educational organizations. Not to be held with EDUA 7051 (or 129.705) or the former 116.705.

**EDUA 7060** Organizational Planning and Development in Education Cr.Hrs.3

(Formerly 129.706) A review of approaches to planning and development in education. Major emphasis is placed on the systematic development of educational organizations. Not to be held with EDUA 7061 (or 129.706) or the former 116.709.

**EDUA 7070** The Analysis of Educational Organizations Cr.Hrs.3

(Formerly 129.707) The application of methods of organizational analysis to educational institutions. Not to be held with EDUA 7071 (or 129.707) or the former 116.710.

**EDUA 7090** Seminar in Administrative Problems in Education Cr.Hrs.3

(Formerly 129.709) Application of theoretical concepts in field situations. Not to be held with EDUA 7091 (or 129.709) or the former 116.706.

**EDUA 7100** Topics in Educational Administration (Readings) 1 Cr.Hrs.3

(Formerly 129.710) A readings course in topics of



significance to educational administration.

**EDUA 7110** Topics in Educational Administration (Field) 2 Cr.Hrs.3  
(Formerly 129.711) A projects and field study course in topics of significance to educational administration.

**EDUA 7200** Philosophy of Education Cr.Hrs.3  
(Formerly 129.720) A study of the philosophic foundations of education. Emphasis will be given to various schools of philosophic inquiry as they relate to education and to contemporary philosophy of education issues. Not to be held with EDUA 7200 (or 129.720) and the former 116.735.

**EDUA 7210** Educational Sociology Cr.Hrs.3  
(Formerly 129.721) An examination of the relationship between education and society, with particular attention to ethnicity, family, and socio-economic status and to the role of the school in the socialization process in the Canadian context. Not to be held with EDUA 7211 (or 129.721) or the former 116.736.

**EDUA 7230** Social Criticism in Education Cr.Hrs.3  
(Formerly 129.723) A critical examination of education, giving special attention to various perspectives which challenge conventional interpretation of education and schooling. Not to be held with EDUA 7230 (or 129.723) and the former 116.738.

**EDUA 7240** Values in Education Cr.Hrs.3  
(Formerly 129.724) Examines the place of values in education. It explores the notion of values, its pervasiveness in education, the approaches to values in education, and the trends and issues related to values in education. Not to be held with EDUA 7241 (or 129.724) or the former 116.732.

**EDUA 7250** Comparative Education Cr.Hrs.3  
(Formerly 129.725) An analysis of educational systems and problems in selected environments in terms of social, political, economic, cultural and other contexts. Students may not hold credit for both EDUA 7250 (or 129.725) and the former 116.714.

**EDUA 7270** Seminar in Cross-Cultural Education 1 Cr.Hrs.3  
(Formerly 129.727) A critical analysis of the social theories and research which form the basis of cross-cultural education. Not to be held with EDUA 7271 (or 129.727) or the former 116.724.

**EDUA 7280** Seminar in Cross-Cultural Education 2 Cr.Hrs.3  
(Formerly 129.728) A critical analysis of the approaches and research in cross-cultural education. Not to be held with EDUA 7281 (or 129.728) or the former 116.725.

**EDUA 7300** History of Canadian Education from 1867 Cr.Hrs.3  
(Formerly 129.730) A study of the historical development of education in Canada from 1867 to the present. Students may not hold credit for both EDUA 7300 (or 129.730) and the former 116.723.

**EDUA 7330** Topics in Educational Foundations (Readings) 1 Cr.Hrs.3  
(Formerly 129.733) A reading and research course in topics of significance to educational foundations.

**EDUA 7340** Seminar in Educational Thought Cr.Hrs.3  
(Formerly 129.734) Intensive studies of the works of selected educational theorists. Students may not hold credit for both EDUA 7340 (or 129.734) and the former 116.719.

**EDUA 7402** Development of Adult Education and Post-Secondary Education Cr.Hrs.3  
A survey structures, theory, philosophies, and curricula of educational systems for adults, as affected by cultural, political, religious, theological and institutional contexts both national and internationally. Not to be held with the former EDUA 7400 (29.740) or or the former EDUA 5400 (129.540).

**EDUA 7404** Lifelong Learning in Educational Settings Cr.Hrs.3  
Explores recent issues, research, and theories about learning across the lifespan, with emphasis on adulthood, as learning is affected by cultural, political, and interpersonal contexts.

**EDUA 7406** Topics in Adult and Post-Secondary Education Cr.Hrs.3  
This course provides an opportunity for students to investigate methodologically, in depth, significant trends and topics from both the scholarly literature of adult and post-secondary education and internet resources.

**EDUA 7408** Seminar in Adult and Post-Secondary Education Cr.Hrs.3  
This course entails an examination of topical issues in adult education and post-secondary education with particular focus on scholarly developments in Canada and Manitoba, based on student interests and thesis or comprehensive examination foci, with learning process instructor facilitated.

**EDUA 7412** Governance of Post-Secondary Education Cr.Hrs.3  
This course examines the history of the governance of post-secondary institutions, the roles of stakeholders in governance, and factors influencing governance in post-secondary institutions today.

**EDUA 7414** Seminar in the Administration of Post-Secondary Education Cr.Hrs.3  
This course has as its focus the application of theoretical concepts of field situations. It will explore administrative skills and their application to selected issues of post-secondary education.

**EDUA 7420** Program Planning in Adult Education Cr.Hrs.3  
(Formerly 129.742) Introduction to factors affecting the planning of programs for adults. Examination of various planning models in relation to principles of adult education. A consideration of theory with major emphasis on directions for planning a program for adults. Local examples will be used. Students may not hold credit for both EDUA 7420 (or 129.742) and the former 116.733.

**EDUA 7510** Seminar in Current Issues in Counselling Cr.Hrs.3  
(Formerly 129.751) Focus on research, theoretical and professional developments; critical contemporary issues; and specific social problems in counselling. Not to be held with EDUA 7511 (or 129.751) or the former 043.703.

**EDUA 7520** Practicum Seminar in Counselling Cr.Hrs.6  
(Formerly 129.752) Supervised experience in both individual



and group counselling. Attention is given to analysis of case studies using audio- and video-tapes. A minimum of 180 hours of counselling experience in placement situations is required. This course is graded pass/fail. Not to be held with EDUA 7521 (129.752) or the former 043.704. Prerequisite: EDUA 5480 or EDUA 5481 (129.548) (P) and permission of the instructor. Pre- or Corequisite: EDUA 7550 or EDUA 7551 or the former 129.755 (C+)

**EDUA 7530** Group Counselling: Theory and Practice Cr.Hrs.6

(Formerly 129.753) Study of theories, rationale, objectives, and research. Acquisition of an experiential understanding of group work through participation in class activities. Development of leadership skills in group counselling by conducting counselling groups under supervision. Not to be held with EDUA 7531 (or 129.753) or the former 043.718. Prerequisite: EDUA 5540 or EDUA 5541 (or 129.554) or 043.512 and EDUA 5480 or EDUA 5481 (or 129.548) (P).

**EDUA 7540** Programs in Career Development Cr.Hrs.3 (Formerly 129.754) A practical course designed for helpers wishing a wider knowledge of career development programs. Participants will investigate and evaluate a wide variety of career counselling techniques and programs and will develop specific, innovative programs to meet the needs of their future counselees. Not to be held with EDUA 7541 (or 129.754) or the former 043.719.

**EDUA 7550** Theories of Counselling Cr.Hrs.3 (Formerly 129.755) The objectives of counselling, assessment of counselling outcomes, theories of personality and counselling. Not to be held with EDUA 7551 (or 129.755) or the former 043.701 or 129.750.

**EDUA 7600** Seminar in Inclusive Special Education Cr.Hrs.6

(Formerly 129.760) A forum for the discussion of topics related to disability issues. Opportunity will be provided for students to examine issues related to their particular professional and scholarly needs. Not to be held with EDUA 7601 (or 129.760) or the former 043.705. Pre- or corequisite: 18 credit hours in Special Education at 5000 level or equivalent (C+).

**EDUA 7610** Behavioural Issues in Educational Settings Cr.Hrs.3

(Formerly 129.761) A study designed to give teachers and school counsellors the necessary theoretical background as well as the practical tools to implement programs for children in conflict. Not to be held with EDUA 7611 (or 129.761) or the former 043.707. Pre- or corequisite: EDUA 5600 or EDUA 5601 (or 129.560 or 043.518) or EDUA 5680 or EDUA 5681 (or 129.568 or 043.542) (C+).

**EDUA 7630** Advanced Assessment and Instruction in Inclusive Special Education Cr.Hrs.3

(Formerly 129.763) An advanced study of diagnostic/prescriptive techniques used to ameliorate learning and behavioural problems in special education. Emphasis is on the development and analysis of related instructional delivery systems. Students may not hold credit for both EDUA 7630 (or 129.763) and the former 043.722. Pre- or corequisite: EDUA 5630 or EDUA 5631 (or 129.563) (C+).

**EDUA 7650** Field Experience in Inclusive Special Education Cr.Hrs.6

(Formerly 129.765) A minimum of 200 hours of supervised placement in an inclusive special education setting. Scheduled seminars facilitate directed study and discussion. This course is graded pass/fail. Prerequisite: 18 credit hours at the 5000-level in Inclusive Special Education or its equivalent (C+). Not to be held with EDUA 7651 (or 129.765) or the former 129.764 or 043.706.

**EDUA 7710** Development in Learning Environments Cr.Hrs.3

(Formerly 129.771) Explores recent advances in developmental psychology as they apply to learning in classrooms and other education-related settings. Emphasis will be given to cognitive change, but motivation and social skill development will also be considered as they relate to cognitive development. Students may not hold credit for both EDUA 7710 (or 129.771) and the former 043.724 or 043.708.

**EDUA 7740** Topics in Educational Psychology 1 Cr.Hrs.3 (Formerly 129.774) A reading and research course in topics of significance to educational psychology.

**EDUA 7750** Topics in Educational Psychology 2 Cr.Hrs.3 (Formerly 129.775) A reading and research course in topics of significance to educational psychology.

**EDUA 7760** Interview Techniques with Children and Adolescents Cr.Hrs.3

(Formerly 129.776) Focuses on the principles, processes and methods of interviewing and counselling individual children, adolescents, parents, school personnel and others. The course aims at integrating theory and practice involving diagnostic and therapeutic communication and observation of behaviour in natural situations with individual children. Not to be held with EDUA 7761 (or 129.776) or the former 043.717. Prerequisite: EDUA 5820 or EDUA 5821 (or 129.582 or 043.505) (C+), EDUA 5550 or EDUA 5551 (or 129.555 or 043.515) (C+), or EDUA 5480 or EDUA 5481 (or 129.548) (P) and EDUA 5490 or EDUA 5491 (or 129.549 or 129.556 or 043.516) (P).

**EDUA 7800** Methods of Educational Research Cr.Hrs.3

(Formerly 129.780) A study of design and data collection techniques for educational research in field settings. Topics covered include quasi-experimentation, survey and observational techniques, simulation, content analysis, and sociometry. Not to be held with EDUA 7801 (or 129.780) or the former 043.709. Prerequisite: EDUA 5800 or EDUA 5801 (or 129.580) or one of the former courses 129.680, 043.610 or consent of instructor.

**EDUA 7810** Evaluating Educational Programs Cr.Hrs.3

(Formerly 129.781) An introduction to current approaches to evaluating educational programs. A review of various evaluation methods/approaches, along with consideration of specific design, ethical, consulting and political issues will be the main focus of this course. Specific skills to be developed are the implementation of educational evaluations, data collection and analysis, and final report writing. Students may not hold credit both EDUA 7810 (or 129.781) and the former 043.726.

**EDUA 7840** Qualitative Research Methods in Education Cr.Hrs.3



(Formerly 129.784) An introduction to qualitative research methods. While the theoretical underpinnings of qualitative research will be discussed, emphasis is placed on learning to conduct a study including design, collecting and analyzing data, and research ethics. Not to be held with EDUA 7841. Prerequisite: EDUA 5800 or EDUA 5801 (or 129.580) or 043.503 or equivalent (C+) and permission of the instructor.

**EDUA 7850** Design and Analysis of Educational Research (Quantitative) Cr.Hrs.3  
(Formerly 129.785) A study of the use of quantitative methods of analyzing educational research data. Descriptive and inferential procedures commonly used in educational research will be discussed and students will learn to use statistical packages. The course will also address when it is appropriate to employ quantitative designs and present common designs and their associated analyses. Prerequisite: EDUA 5800 (or 129.580) (C+). Students may not hold credit for both EDUA 7850 (or 129.785) and the former 129.681 or the former 43.535 or 43.611.

**EDUA 7860** Advanced Topics in Educational Research Cr.Hrs.3  
(Formerly 129.786) An advanced study of special topics in educational research with an in-depth study of specific topics which will change from year to year. Prerequisite: EDUA 5800 (or 129.580) (C+) and permission of the instructor. Students may not hold credit for both EDUA 7860 (or 129.786) and the former courses 129.783 or 043.711

**EDUA 7870** Measurement and Evaluation in Schools Cr.Hrs.3  
(Formerly 129.787) An advanced study of the principles of measurement and evaluation and their application to teaching and learning in schools. Current issues in measurement and evaluation, including alternative forms of classroom assessment and standard setting, will be discussed. Prerequisite: EDUA 5810 or EDUA 5811 (or 129.581) or the former 043.301 (C+) or equivalent, or consent of instructor.

### Curriculum, Teaching and Learning:

**EDUB 7010** Seminar in Art Education 1 Cr.Hrs.3  
(Formerly 132.701) An examination of the major historical, philosophical, psychological and socio-cultural foundations of art education. The study of major developments in each of these areas will form a basis for understanding current theory and practice. Students may not hold credit for both EDUB 7010 (or 132.701) and the former 063.725.

**EDUB 7020** Seminar in Art Education 2 Cr.Hrs.3  
(Formerly 132.702) The study of the methodology, content and problems of art education research, curriculum development and practice. Students will explore research methodology and curriculum design through individualized projects related to classroom practice. May not be held with EDUB 7020 (or 132.702) and the former 063.726.

**EDUB 7030** The Arts in Education Cr.Hrs.3  
(Formerly 132.703) An examination of the role of the arts in general education. Emphasis will be placed on knowledge of the role of perception, aesthetic valuing and cognition in arts education, and application of this understanding and knowledge to educational practice. Students may not hold credit for both EDUB 7030 (or 132.703) and the former

063.750.

**EDUB 7040** Seminar in Educational Drama Cr.Hrs.3  
(Formerly 132.704) A critical examination of the literature and current research in educational drama. Consideration will be given to the philosophy, theory, and practice of drama in the classroom, and the evaluation of programs. May not be held with EDUB 7040 (or 132.704) and the former 063.743.

**EDUB 7050** Seminar in Educational Theatre Cr.Hrs.3  
(Formerly 132.705) A critical examination of the literature and current research in educational theatre. Consideration will be given to the philosophy, theory, and practice of theatre in the school setting, and to the evaluation of programs. May not be held with EDUB 7050 (or 132.705) and the former 063.744.

**EDUB 7060** Seminar and Practicum in Clinical Diagnosis and Remediation Cr.Hrs.6  
(Formerly 132.706) A thorough study of the etiology, diagnosis, and treatment of complex reading disabilities; practical experience under supervision in diagnosing reading problems and in prescribing, treating, interpreting, and reporting findings. Students may not hold credit for both EDUB 7060 (or 132.706) and the former 063.705. Prerequisite: EDUB 5400 (or 132.540) or 063.599 (C+).

**EDUB 7070** Classical Research in Reading Cr.Hrs.3  
(Formerly 132.707) A critical review, analysis, and synthesis of classical research studies in the psychology, psycholinguistics, sociology, and pedagogy of reading. Students may not hold credit for both EDUB 7070 or EDUB 7071 (or 132.707) and the former 063.713.

**EDUB 7090** Seminar in Reading Processes Cr.Hrs.3  
(Formerly 132.709) A critical examination of theories and models of reading; a thorough study of the reading processes in relation to language, vision, hearing, neurological development, cognition and motivation. May not be held with EDUB 7090 (or 132.709) and the former 063.739.

**EDUB 7100** Language and Literacy Curriculum Inquiry in the Early Years Cr.Hrs.3  
(Formerly 132.710) A study of language and literacy curriculum in the early years of schooling. Participants will identify and examine issues and problems arising out of theory, research, and curriculum practices in early years classrooms. Participants will have the opportunity to develop and pursue a curriculum project in accordance with their professional research interests. May not be held with EDUB 7100 (or 132.710) and the former 063.755.

**EDUB 7110** Research in Language and Literacy Development Cr.Hrs.3  
(Formerly 132.711) An exploration of language and literacy development issues of professional interest to teachers. Participants will critically analyze language/literacy development theories, published research, and classroom observations. Opportunities will be created for participants to conduct their own language/literacy development inquiry in an educational setting. Students may not hold credit for both EDUB 7110, EDUB 7111 (or 132.711) and the former 063.756.



**EDUB 7150** Seminar in Reading and Response to Literature Cr.Hrs.3  
(Formerly 132.715) This course is designed to familiarize students with the historical and philosophical trends in reading and response to literature; it will survey major developmental reading and literary response trends, examine the epistemological assumptions associated with those developments and explore the developing thought in how students process written texts, in particular, literary texts. The course will also examine curricular implications in reading and literary response. Students may not hold credit for both EDUB 7150 (or 132.715) and the former 063.760.

**EDUB 7160** Language Teacher as Researcher Cr.Hrs.3  
(Formerly 132.716) The purpose of this course is to investigate the characteristic parameters of teachers as researchers in the context of their own classroom. Three fundamental principles provide a curricular perspective to guide the participants: voice, conversation, and community. With this perspective, the language teacher engages in classroom inquiry with the goal of understanding language and teaching through the learners as curricular informants. Students may not hold credit for EDUB 7160 and EDUB 7161 (or 132.716) or the former 063.761.

**EDUB 7180** Research in Written Composition Cr.Hrs.3  
(Formerly 132.718) A critical analysis of research and research methods in written composition process and pedagogy. Consideration will be given to classic studies, historical development, current trends and research, and evaluation procedures as they apply to the study and teaching of writing. Students may not hold credit for EDUB 7180 and EDUB 7181 (or 132.718 or 063.763).

**EDUB 7190** Research in Language for Learning Cr.Hrs.3  
(Formerly 132.719) A critical study of the research literature in how language can support learning in all areas of schooling. The course will focus on the role of language in supporting learning in all subject areas and will specifically investigate the research about the role of talking, reading, and writing as tools for learning. Students may not hold credit for EDUB 7190 and EDUB 7191 (or 132.719 or 063.764).

**EDUB 7210** Seminar in E.S.L. Theory and Practice Cr.Hrs.3  
(Formerly 132.721) Opportunity will be given to examine critically the major theories and methodologies used in E.S.L. instruction and research. Students may not hold credit for both EDUB 7210 (or 132.721) and the former 063.727.

**EDUB 7212** Critical Applied Linguistics in a Global Context Cr.Hrs.3  
We will examine the role of English comparatively and internationally in a variety of educational systems and regimes, relating the micro-relations of applied linguistics to the macro relations of society, exploring the roles of critical theory in language teaching and learning, and developing self-reflexivity as scholars in second language education.

**EDUB 7220** Research Issues and Application in TESL (Teaching English as a Second Language) Cr.Hrs.3  
(Formerly 132.722) This course focuses on a survey of ESL and language development research issues, procedures, and findings. This research review will serve as the basis for students to plan individual research and conduct a pilot study. Students may not hold credit for both EDUB 7220 (or

132.722) and the former 063.753.

**EDUB 7250** Theoretical Foundations of the Social Studies Cr.Hrs.3  
(Formerly 132.725) An examination of the development of social studies education, including the theories, research, ideas and ideologies that have and continue to shape social studies curriculum and pedagogy. Students may not hold credit for both EDUB 7250 (or 132.725) and the former 063.737.

**EDUB 7260** Seminar in Social Science Education Cr.Hrs.3  
(Formerly 132.726) An examination of current trends and developments in social science education as they affect the school curriculum at all grade levels, K-12. Particular attention will be paid to questions of curriculum contents, teaching strategies and student evaluation. Students may not hold credit for both EDUB 7260 (or 132.726) and the former 063.738.

**EDUB 7270** Culture, Citizenship and Curriculum Cr.Hrs.3  
(Formerly 132.727) An examination of the role of school curricula in preserving, transmitting and transforming conceptions and practices of culture and citizenship, with particular reference to social and political education in schools. Students may not hold credit for both EDUB 7270 (or 132.727) and the former 063.749.

**EDUB 7280** Early Years Curriculum: Philosophical Traditions and Future Directions Cr.Hrs.3  
(Formerly 132.728) An exploration and evaluation of models, issues, and priorities in Early Years curriculum (K-4). Participants will design curriculum which realizes and particularizes the theories, models, concepts and engagements being examined in the course. Students may not hold credit for EDUB 7280 and EDUB 7281 (or 132.728 or 063.747).

**EDUB 7290** Curriculum Research in Early Years: Young Children and Social Semiotics Cr.Hrs.3  
(Formerly 132.729) An investigation of the social nature of learning and children's use of semiotic systems (language, art, music, dance, drama, and mathematics) as ways of knowing in the Early Years (K-4) classroom. Participants will conceive, organize, and conduct a research project that allows them to develop an understanding of children's use of one or more semiotic systems within a curriculum context. Students may not hold credit for both EDUB 7290 and 132.729 or 063.748.

**EDUB 7330** Inquiry in Curriculum and Instruction Cr.Hrs.3  
An examination of the issues involved in critiquing and synthesizing inquiry in curriculum and instruction studies in the humanities and social sciences. The course will also introduce students to the variety of ways in which inquiry may be conducted in instructional settings and will focus on how the research on curriculum and instruction can be validly synthesized across studies. Students may not hold credit for both EDUB 7330 (or 132.733) and the former 063.754.

**EDUB 7340** Topics in Curriculum: Humanities and Social Sciences Cr.Hrs.3  
(Formerly 132.734) The study of selected topics in curriculum and instruction in the humanities and social sciences.



**EDUB 7350** Independent Studies in Curriculum: Humanities and Social Sciences Cr.Hrs.3

(Formerly 132.735) Independent study of selected issues related to curriculum and instruction in the humanities and social sciences. This course may be used for field studies.

**EDUB 7360** Topics in Curriculum: Mathematics and Natural Sciences 1 Cr.Hrs.3

(Formerly 132.736) A reading and research course in topics of significance to curriculum development in the areas of specialization offered by the Department.

**EDUB 7370** Topics in Curriculum: Mathematics and Natural Sciences 2 Cr.Hrs.3

(Formerly 132.737) A continuation of EDUB 7360 for students engaging in readings and research too great in scope to be included within a three-credit program.

**EDUB 7390** Curriculum in Vocational Education Cr.Hrs.3

(Formerly 132.739) A review of the major curriculum changes in vocational education with reference to the public school, the community college and post-compulsory institutions. Emphasis will be on models, supportive research and curricular design strategies. Students may not hold credit for both EDUB 7390 (or 132.739) and the former 081.714.

**EDUB 7416** Teaching and Learning in Post –Secondary Education Cr. Hrs 3

An in-depth study of teaching and learning in post-secondary education contexts grounded in current theoretical, research and pedagogical literatures.

**EDUB 7420** Study of Teaching Cr.Hrs.3

(Formerly 132.742) Views of teaching, paradigms, and methodologies for studying teaching and carrying out inquiries into teaching. Students may not hold credit for EDUB 7420 and EDUB 7421 (or 132.742 or 081.722).

**EDUB 7430** Trends in Vocational Education Cr.Hrs.3

(Formerly 132.743) An examination of the historical trends in vocational education as influenced by a changing society. Special emphasis will be placed on the contributions of individuals on the impact of federal and provincial legislation as it affects vocational education. Students may not hold credit for both EDUB 7430 (or 132.743) and the former 081.713.

**EDUB 7440** Seminar in Home Economics Education Cr.Hrs.3

(Formerly 132.744) An application of current research to the design, implementation and evaluation of programs in home economics education. Students may not hold credit for both EDUB 7440 (or 132.744) and the former 081.716.

**EDUB 7450** Seminar in Educational Technology Cr.Hrs.3

(Formerly 132.745) A review of current research in educational technology and a critical appraisal of recent technology in instructional development. Students may not hold credit for both EDUB 7450 (or 132.745) and the former 081.721.

**EDUB 7460** Information Technology and Education Cr.Hrs.3

(Formerly 132.746) A theoretic study of information media and environments, their educational and societal impact, and their educational application. Students may not hold credit

for both EDUB 7460 (or 132.746) and the former 081.723.

**EDUB 7470** Seminar in Mathematics Education Cr.Hrs.3

(Formerly 132.747) An analysis of methods and materials in mathematics education, a review of research, and a critical appraisal of current curriculum development. Students may not hold credit for both EDUB 7470 (or 132.747) and the former 081.720.

**EDUB 7480** Advanced Seminar in Mathematical Diagnosis and Remedy Cr.Hrs.3

(Formerly 132.748) A close examination of the theory and practice of mathematical diagnosis and remedy across the school curriculum. Students may not hold credit for both EDUB 7480 (or 132.748) and the former 081.724. Prerequisite: permission of instructor.

**EDUB 7490** Theories of Teaching Mathematics (Secondary) Cr.Hrs.3

(Formerly 132.749) An examination of the objectives of secondary school mathematics, mathematics curriculum organization and development, theories of learning and teaching secondary school mathematics, and mathematics assessment programs. Students may not hold credit for both EDUB 7490 (or 132.749) and the former 081.725.

**EDUB 7500** Seminar in Science Education Cr.Hrs.3

(Formerly 132.750) A review of current research in science education, and a critical appraisal of current curriculum development in science. Students may not hold credit for both EDUB 7500 (or 132.750) and the former 081.719. Prerequisite: [STAT 1000 (or 005.100) (C+) and STAT 2000 (or 005.200) (C+)] or [EDUA 5800 or EDUA 5801 (or 129.580) (C+) or equivalent].

**EDUB 7510** Educational Problems and Advanced Methods in Health and/or Physical Education Cr.Hrs.3

(Formerly 132.751) An examination of the relationship of research to educational practice in the teaching of health and/or physical education. Students may not hold credit for both EDUB 7510 (or 132.751) and the former 081.711.

**EDUB 7520** Contemporary Curricula in Health and/or Physical Education Cr.Hrs.3

(Formerly 132.752) An examination of principles and content of health and/or physical education curricula and programs. Logistical and social-political factors associated with implementation will be examined. Students may not hold credit for both EDUB 7520 (or 132.752) and the former 081.712.

**EDUB 7530** Curriculum Development and Implementation in Language and Literacy Cr.Hrs.3

(Formerly 132.753) A study of historical antecedents - issues, theory and research - in relation to both the reading and writing curriculum contrasted with current structuralist, poststructuralist and deconstructivist views of knowledge construction with emphasis on discourse synthesis, individual cognitive processes and social influences on literacy learning. Not to be held with EDUB 7531. Prerequisite: A minimum of 3 credit hours of reading courses (c+).

**EDUB 7540** Final Seminar in Curriculum, Teaching and Learning Cr.Hrs.3

(Formerly 132.754) Seminar and workshop on processes and products in writing and defending an M.Ed. final inquiry



paper. Both qualitative and quantitative research models will be acknowledged. Not to be held with EDUB 7541.

Prerequisite: Minimum 24 credit hours completed in a comprehensive M.Ed. Program (C+).

**EDUB 7550** Historical and Contemporary Approaches to Curriculum Cr.Hrs.3  
(Formerly 132.755) Historical Developments of curriculum as a field of study and inquiry, including the philosophical, social, political, and cultural contexts of curriculum. Students may not hold credit for both EDUB 7550 (or 132.755) and either former 132.730 and 063.734.

**EDUB 7560** Theory and Practice of Curriculum Design and Development Cr.Hrs.3  
(Formerly 132.756) An examination of the theory and practice of the design, development, implementation and evaluation of curricula for K-12 and adult/post-secondary levels. Students may not hold credit for both EDUB 7560 and 132.756 or 132.731 or 063.735.

**EDUB 7570** Contemporary Perspectives and Practices in Music Education Cr.Hrs.3  
(Formerly 132.757) A study of current and emerging perspectives and practices in music education with emphasis on recent theory and research as it relates to music teaching and learning at all levels.

**EDUB 7580** Theory and Research in a Second Language Acquisition Cr.Hrs.3  
(Formerly 132.758) Examination of the development of the field of second language acquisition study, including historical views, issues, theories and models in relation to language universals, cognitive development, language mastery, and second language acquisition and learning.

**EDUB 7590** Internationalization of Technical and Vocational Education and Training Cr.Hrs.3  
(Formerly 132.759) An exploration and critical evaluation of basic assumptions underlying the theories and values of globalization and the internationalization of technical and vocational education and training (TVET). Emphasis will be placed on the examination of how these theories and values influence institutions, programs, policies and practices in TVET.

**EDUB 7600** Action Research in Education Cr.Hrs.3  
The study of the theory and practice of action and participatory action research in education including models, principles and practices, criteria for assessing quality, ethics, and modes of representation. Prerequisite: EDUA 5800 or EDUA 5801(129.580) (C+).

**EDUB 7990** Seminar in Environmental Education Cr.Hrs.3  
(Formerly 132.799) Designed for students wishing to concentrate on science teaching and learning within the context of environmental education. Existing and projected programs and approaches to environmental education will be subjected to critical analysis. Students may not hold credit for both EDUB 7990 (or 132.799) and the former 081.710.

## Dental Diagnostic and Surgical Sciences

For information about graduate programs in the following units: Oral Biology or Preventative Dental Science please refer to the table of contents for page numbers.

Oral and Maxillofacial Surgery

**Head:** A. Shah

**Campus Address/General Office:** D343-790 Bannatyne Avenue

**Telephone:** 204 789 3633

**Fax:** 204 272-3077

**Email Address:** [oral\\_surgery@umanitoba.ca](mailto:oral_surgery@umanitoba.ca)

**Website:** [oral\\_surgery@umanitoba.ca](http://oral_surgery@umanitoba.ca)

**Academic Staff:** Please refer to the website for Faculty information: [umanitoba.ca/faculties/dentistry/gradPrograms/gr\\_ad\\_OMS](http://umanitoba.ca/faculties/dentistry/gradPrograms/gr_ad_OMS)

### Master of Dentistry (Oral and Maxillofacial Surgery), Program Information

The Master of Dentistry (Oral and Maxillofacial Surgery) which is four years in length includes a four-year hospital residency for which a Post-Graduate Training Certificate is awarded. Usually one student is accepted per year. The program has full accreditation from the Commission on Dental Accreditation of Canada. The primary objective of the program is to train dentists to become competent, ethical Oral and Maxillofacial surgeons for practice in Canada, and to provide them with a scientifically based curriculum which will prepare them for the challenges they will face in the development of their speciality, throughout their professional careers.

The clinical program provides comprehensive training in all the major areas generally included within the scope of practice of an Oral and Maxillofacial Surgeon. Students are provided with opportunities to attend and present papers at National and International conferences related to aspects of their speciality and an external elective rotation is permitted subject to approval of the Program Director.

### Fields of Research

Faculty supervises every student in at least one research project during the training period and their interests provide for a wide spectrum of clinically related topics. Dental implants, maxillofacial trauma, temporomandibular disorders, cleft lip and palate, tissue regeneration and wound healing, cranio-facial deformity, surgical pathology, including head and neck oncology, oral medicine and therapeutics are examples of areas in which faculty have published and have a continuing interest. Collaborative research with other departments is encouraged and does occur.



### Research Facilities

The research facilities in the Faculties of Dentistry and Medicine, the Health Sciences Centre and related institutions in the Winnipeg Regional Health Authority are extensive, accessible, and provide opportunities for a wide range of research endeavours by graduate students in Oral and Maxillofacial Surgery.

### Admission Requirements

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, applicants must be Canadian citizens or permanent residents of Canada and be in possession of a National Dental Examining Board of Canada Certificate. They must comply with provincial requirements for licensing of interns and residents. Some additional post-graduate experience is desirable.

### Application Deadlines

Students must submit their application and supporting documentation to the Faculty of Graduate Studies by September 1st, prior to the year of admittance. The normal starting date is July 1st.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students must complete: all clinical rotations and assignments as set out in the four years of hospital residency training; courses DDSS 7230, DDSS 7240, DDSS 7250, DDSS 7260, DDSS 7270, DDSS 7280 and DDSS 7290; ancillary course ANAT 7060, CHSC 7470 and other basic science courses as selected by the department. An essay/research project DDSS 7220 in a specified area selected in consultation with the department is required.

Second Language Reading Requirement: None

Expected Time to Graduate: Four years

### Ph.D. in Dental Diagnostics,

There is no Ph.D. Program in Dental Diagnostic and Surgical Sciences.

## Periodontics

**Head:** A. Shah

**Campus Address/General Office:** D343 - 790 Bannatyne Avenue

**Telephone:** 204 789 3633

**Fax:** 204 272-3077

**Email Address:** [periodontics@umanitoba.ca](mailto:periodontics@umanitoba.ca)

### Website:

[http://umanitoba.ca/faculties/dentistry/gradPrograms/grad\\_periodontics](http://umanitoba.ca/faculties/dentistry/gradPrograms/grad_periodontics)

**Head, Periodontics:** Shirley Gelskey (Acting)

### Master of Dentistry (Periodontics), Program Information

The three-year Master of Dentistry (Periodontics) Program is one of only four graduate periodontics programs in Canada. The program accepts two students every two of three years. At any given time there are four students in the program. The program entails clinical training, lectures, seminars in the clinical and related basic sciences and research. The program is certified and fully accredited by the Commission on Dental Accreditation of Canada and, as such, is also recognized by the American Dental Association.

The mission of the program is to educate dentists to be scientifically-based, clinically-competent, and community-concerned, ethical periodontists. The program provides periodontal consultation and treatment services, including dental implants, to patients attending the dental school and patients referred by dentists in Winnipeg and throughout Manitoba. Students are provided the opportunity to treat a full range of periodontal problems and to participate in ongoing clinical and basic periodontal research. The Graduate Periodontics Clinic simulates a private periodontics practice and provides dental hygienist and dental assistant support to students. In addition, a clinic is held at the adjacent Health Sciences Centre where periodontal consultative and treatment procedures are provided for patients who have serious medical conditions.

### Fields of Research

Research interests of faculty involved with the program include (a) clinical trials of therapeutic interventions in the treatment of periodontitis and peri-implantitis, (b) diagnosis of periodontal diseases, and (c) the effect of tobacco on periodontal tissues and smoking cessation initiatives in Periodontics and (d) oral systemic relationships. In addition, collaborative research opportunities are available in such areas as saliva, calculus and plaque formation, the microbiology of periodontitis and cell signaling mechanisms, through the Department of Oral Biology.

### Research Facilities

In addition to the clinical facilities, general laboratories, radiographic and darkroom facilities of the Faculty of Dentistry, there is access to equipment belonging to the Department of Oral Biology. Clinical facilities are also available at the adjacent Health Sciences Centre Hospital. The Grad Perio Clinic has high-tech instruments for research like Periotron and Florida Probe.

### Admission Requirements



In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, applicants must have a D.M.D. degree or its equivalent from an approved college or university.

### Application Deadlines

Students must submit their application and supporting documentation to the Faculty of Graduate Studies by September 1, prior to the year of admittance. The normal starting date is August 1.

### Program Requirements

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, students must complete: courses DDSS 7010, DDSS 7050, DDSS 7120, DDSS 7130, DDSS 7150, DDSS 7210, DDSS 7230 and DDSS 7300; ancillary courses ANAT 7060, CHSC 7470, ORLB 7090, ORBL 7110 and other basic sciences as selected by the department; An essay/ research project (DDSS 7220) in a specified area selected in consultation with the department.

Second Language Reading Requirement: None

Expected Time to Graduate: Three years

### Ph.D. Periodontics,

There is no Ph.D. Program in Dental Diagnostic and Surgical Sciences.

## Dental Diagnostic and Surgical Sciences-

**DDSS 7010** Biology and Pathology of the Periodontium Cr.Hrs.6

(Formerly 103.701) Selected topics in cell biology precedes a comprehensive and detailed survey of the periodontium, its constituent tissues and its function; the cell dynamics of inflammation and wound healing and the histopathology of the early and advanced periodontal lesion.

**DDSS 7050** Oral Medicine and Oral Diagnosis Cr.Hrs.3

(Formerly 103.705) This course provides the student, through clinical rotations, with the opportunity to enhance diagnostic and non-surgical management of oral pathologic conditions including mucosal and intrabony lesions, temporomandibular joint disorders, and oral manifestations of systemic disease in both otherwise healthy and medically compromised patients.

**DDSS 7120** Advanced Clinical Periodontics Cr.Hrs.4

(Formerly 103.712) This seminar course will review contemporary clinical periodontics by considering assigned readings in current texts and review articles. This course is intended to assure that students have a comprehensive overview of conventional periodontal therapy early in their

education.

**DDSS 7130** Occlusion Cr.Hrs.3

(Formerly 103.713) A seminar series devoted to the diagnosis, treatment planning and management of patients with craniomandibular disorders.

**DDSS 7150** Review of Periodontal Literature Cr.Hrs.6

(Formerly 103.715) This course will consider the concepts underlying the current practice of periodontics by reviewing assigned readings from the scientific literature. Students will be expected to apply principles of critical evaluation in order to identify and appreciate the limitations of these studies and thus the limitations of the current concepts derived from them.

**DDSS 7210** Clinical Practice in Periodontics Cr.Hrs.18

(Formerly 103.721) Designed to provide the clinical experience which is essential for specialty practice in Periodontics (circa 1600 hours).

**DDSS 7220** Essay/Research Project Cr.Hrs.3

(Formerly 103.722) An essay/research project is required for each student. It is selected in consultation with, and approved by the department head. This course is graded pass/fail.

**DDSS 7230** Advanced Oral Pathology Cr.Hrs.6

(Formerly 103.723) The four major etiopathogenic categories of diseases affecting the oral and paraoral structures are discussed with emphasis on common conditions and entities significant to various dental specialties. Lectures cover epidemiology, clinical and laboratory features and management principles with supplementation by seminars or laboratories.

**DDSS 7240** Advanced Oral and Maxillofacial Surgery Seminar 1 Cr.Hrs.3

(Formerly 103.724) This course includes a thorough review of the applied scientific basis for the practice of oral and maxillofacial surgery and emphasizes surgical anatomy and pathology, diagnosis and technique. Instruction will be given by means of lectures, seminars, case presentations and a critical review of current literature. Year 1.

**DDSS 7250** Clinical Advanced Oral and Maxillofacial Surgery 1 Cr.Hrs.6

(Formerly 103.725) The first year of hospital residency includes training in history taking and physical diagnosis; hospital protocols and ward procedure; minor oral surgery procedures and pain control techniques; operating room procedures and general in-patient care. Year1.

**DDSS 7260** Advanced Oral and Maxillofacial Surgery Seminar 2 Cr.Hrs.3

(Formerly 103.726) Lectures, seminars, case presentations and reviews of current literature will emphasize the state of current knowledge regarding the clinical practice of advanced oral and maxillofacial surgery. Year 2.

**DDSS 7270** Clinical Advanced Oral and Maxillofacial Surgery 2 Cr.Hrs.6

(Formerly 103.727) The second year of the hospital residency training program includes training in minor oral surgery, including dento-alveolar, pre-prosthetic surgery and implantology. It also provides an introduction to advanced oral and maxillofacial surgery and maxillofacial imaging. A



rotation to Internal Medicine is included. Year II.

**DDSS 7280** Clinical Advanced Oral and Maxillofacial Surgery 3 Cr.Hrs.6  
(Formerly 103.728) The third year of the hospital residency training program includes rotations in Anaesthesia, Internal Medicine, General and Plastic Surgery, Surgical Intensive Care and Emergency Room. It also includes training in advanced oral and maxillofacial surgery. An elective rotation may also be arranged. Year III.

**DDSS 7290** Clinical Advanced Oral and Maxillofacial Surgery 4 Cr.Hrs.6  
(Formerly 103.729) The fourth year of the hospital residency training program is devoted to advanced oral and maxillofacial surgery. The student is designated chief resident and assumes a greater degree of responsibility in patient care and administrative activities. Year IV.

**DDSS 7300** Dental Implantology Cr.Hrs.3  
(Formerly 103.730) A seminar course devoted to providing an in-depth understanding of the basic and applied aspects of the placement of dental root form implants in humans. This course is a prerequisite to the actual surgical placement of implants undertaken in DDSS 7210 (or 103.721).

## Design and Planning

**Head:** (and Graduate Chair) M. A. Beecher

**Campus Address/General Office:** 201 Russell Building

**Telephone:** (204) 474 9458

**Fax:** (204) 474 7532

**Email Address:** [architecture@umanitoba.ca](mailto:architecture@umanitoba.ca)

**Website:**

[umanitoba.ca/faculties/architecture/programs/Phd/index.html](http://umanitoba.ca/faculties/architecture/programs/Phd/index.html)

**Academic Staff:** Please refer to website for Faculty information: [umanitoba.ca/faculties/architecture/programs/Phd/index.html](http://umanitoba.ca/faculties/architecture/programs/Phd/index.html)

The Ph.D. in Design and Planning in the Faculty of Architecture is a Faculty based program that provides candidates with the opportunity to conduct advanced and focused research in any of the disciplines represented in the Faculty. Specifically, the Ph.D. program areas in the Faculty of Architecture: Design and Planning Technologies; Design and Planning Education; Design and Planning Practice; Design and Planning Theory; Sustainable Design and Planning.

Under the general supervision of the Doctoral Studies Committee. The Doctoral Studies Committee is responsible for the general administration of the Program, in accordance with the policy guidelines approved by the Faculty of Architecture Council and, where applicable, the Faculty of Graduate Studies. In essence, the Doctoral Studies Committee exercises the responsibilities assigned to a Department Head by the Faculty of Graduate Studies in the case of department-based graduate programs. The Doctoral Studies Committee is composed of five members and is chaired by the Associate Dean (Research). The remaining members of the Doctoral Studies Committee, all of whom

hold a doctorate or equivalent, are appointed by the Departmental Councils of the Faculty of Architecture.

In addition to the regulations, policies and procedures of the Faculty of Graduate Studies which govern Ph.D. programs (see the Graduate Calendar of the University of Manitoba), the Faculty of Architecture has adopted these supplemental regulations to govern the Faculty-based Ph.D. Program.

### Admission

**Admission to Ph.D. in Design and Planning** program is competitive. A number of factors are taken into account in arriving at an admission decision: (1) the applicant's previous academic background, (2) the practice-based and/or academic experience of the applicant, (3) the referees' assessments of the applicant, (4) the ability of the Faculty to provide the program of studies and research requested by the applicant, (5) the funding support that the applicant has obtained and/or confirmed, and (6) the availability of a faculty member that has expertise in the research area and is willing to supervise the program of studies and research of the applicant.

Students who have a Master degree in a planning or design discipline (architecture, planning, interior design or landscape architecture or equivalent related degree [e.g., industrial design, urban design]) from a recognized institution and who have met the requirements of the Faculty of Graduate Studies will be eligible for consideration to the program.

Students who possess a Master degree in another field outside of the design and planning disciplines from a recognized institution may be considered if they have an undergraduate degree in planning or a design discipline from a recognized institution and have an accumulated grade point average of 3.75 in their Master degree.

Candidates must demonstrate that they have an established record in professional practice and/or professional education, and have demonstrated interdisciplinary experience and/or knowledge. It is recommended that candidates have a minimum of five years of professional practice experience and/or have taught at a recognized institution for a minimum of five years.

Candidates will declare a specialization in one of five following areas: Design and Planning Technologies; Design and Planning Education; Design and Planning Practice; Design and Planning Theory; Sustainable Design and Planning. Candidates to the program will provide: (a) a Problem Statement and Study/Research Rationale (i.e., a description of proposed study [minimum of 5 pages and maximum of 10 pages]); (b) a dossier of their work; (c) evidence of financial support; and (d) three letters of reference (at least one of whom will be an academic) from distinguished members of the planning and/or design profession(s) or equivalent institutions. Candidates to the program may be interviewed by at least three faculty members, two of whom will be from the Faculty of Architecture.



### Application Deadlines

Due to funding opportunities, all completed applications must be received by the Faculty of Graduate Studies by the second Friday of October of the year preceding September registration. For updated information please visit the Faculty of Architecture website.

### Program Requirements

Each student will be required to take a minimum of 12 credit hours of 700 level courses of which 6 credit hours must include Advanced Theory of Design and Planning (3) and Advanced Research Methods in Design and Planning (3). Students should complete their course work by the end of their first year.

All students will complete a Comprehensive Research Paper and a Comprehensive Design and Planning Theory Project by the end of their second year.

### IMPORTANT NOTE:

Each student is responsible for ensuring that they have approval for and have registered in the courses appropriate for their area of study, as determined in consultation with their Advisor and their Advisory Committee.

### Coursework:

Coursework is subject to the following regulations:

Each student will be required to take a minimum of 12 credit hours of 700 level courses of which 6 credit hours must include Advanced Theory of Design and Planning (3) and Advanced Research Methods in Design and Planning (3).

All candidates will complete a Comprehensive Research Paper, and a Comprehensive Design and Planning Theory Project.

A minimum of 6 credit hours of coursework at the 700 level must be in the student's program area and must include the program core coursework appropriate to the student's program area. The program area coursework is specific to the individual student and is defined by the Advisory Committee;

Where necessary, the student may be required to complete additional background coursework as identified by the Advisory Committee.

On the recommendation of the Advisory Committee and with the approval of the Doctoral Studies Committee, a maximum of 3 credit hours may be transferred into the program from other approved institutions.

### Comprehensive Research Paper and Comprehensive Design and Planning Project:

The Comprehensive Research Paper is a literature review that examines potential research methods appropriate for the student's doctoral studies program. The student's advisor will be responsible for reviewing the Comprehensive Research Paper and determining if it is acceptable or not acceptable. If a Comprehensive Research Paper is deemed by the advisor to be unacceptable, the student will re-submit the paper to the advisor. If the advisor deems that the re-submitted Comprehensive Research Paper is still not acceptable, the advisor will submit the Comprehensive Research Paper to the Associate Dean: Research who will make the final determination of acceptability. The Associate Dean: Research's opinion will be final. Should a student fail to have their re-submitted Comprehensive Research Paper accepted, they will be asked to withdraw from the Ph.D. Program.

The Comprehensive Design and Planning Project is a project that will explore the student's area of research interest and identify preliminary considerations that will be explored in detail in the doctoral thesis. The Comprehensive Design and Planning Project will be a written and/or design based submission that is reviewed by the student's Advisory Committee. The Advisory Committee will determine by majority if the Comprehensive Design and Planning Project is acceptable or unacceptable. If the Comprehensive Design and Planning Project is deemed to be unacceptable, the student will be required to re-submit their work until the Advisory Committee deems the Comprehensive Design and Planning Project acceptable. The Advisory Committee may ask the student to withdraw from the Ph.D. program if the re-submitted Comprehensive Design and Planning Project is deemed unacceptable.

### IMPORTANT NOTE:

As soon as the student and advisor agree upon the program of studies, the program forms must be completed and submitted by the advisor to the Chair of the Doctoral Studies Committee for approval. These forms are available online:

[http://umanitoba.ca/faculties/graduate\\_studies](http://umanitoba.ca/faculties/graduate_studies) and  
<http://umanitoba.ca/architecture>

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section. The Ph.D. program consists of coursework, original research and thesis. Normally, 12 credit hours of coursework (all at the 700 level) are required beyond the Master degree or its equivalent. The minimum time requirement is two calendar years of full-time study and research, of which at least one academic year must be spent on campus.

Second language requirement: none

Expected time to graduation: two to four years

### ARCG 7100 Cr.Hrs.3

This course is intended to promote critical thinking and provide opportunities to explore in detail key issues, ideas and theories about design and planning. Considerations may include: The relationship of design and planning theories to



the evolution of design and planning practice; Ways in which design and planning theories have been understood to shape built form; Factors that have shaped design and planning theories, their commonalities and disjuncture; Theory discourse as a means of discovering design and planning meaning; The role of theory in practice, research and discovery; The relationship of design and planning theories to other discipline theories as a means of identifying commonalities of interest.

**ARCG 7102** Studio Topics in Environmental Processes Cr.Hrs.6

A detailed studio study of some special topics in architecture, city planning, landscape architecture or interior design.

**ARCG 7120** ADV RES DES PLN Cr.Hrs.3

This course is intended to explore research methods pertinent to the study of design and planning. The considerations to be examined may include: Potential research tools and techniques that are pertinent to the exploration of design and planning theory, practice and development; Exploration of emerging research processes and methodologies that inform minority and feminist discourse; Review of the evolution of design and planning methods; Analysis of the relationships between research methods in aligned disciplines as those research methods may inform design and planning understanding.

## Disability Studies

**Program Director:** Director: Dr. Nancy E. Hansen

**Campus Address/General Office:** 128 Education Building

**Telephone:** (204) 474-7017

**Fax:** (204) 474-6676

**Email Address:** [disability\\_studies@umanitoba.ca](mailto:disability_studies@umanitoba.ca)

**Website:** [http://umanitoba.ca/disability\\_studies](http://umanitoba.ca/disability_studies)

**Academic Staff:** Please refer to the website for faculty information: [http://umanitoba.ca/disability\\_studies](http://umanitoba.ca/disability_studies)

The focus of the program allows students to examine the policies and practices of all societies in order to understand the social, rather than the physical or psychological determinants, of the experience of disability. This focus shifts the emphasis from a prevention, treatment, remediation paradigm to a social, cultural, political one.

We offer an interdisciplinary Master's Degree Program in Disability Studies. We also offer a graduate level Option in Disability Studies that is available to both Master's and Doctoral students.

Students in the Master's Program will have the opportunity to apply their undergraduate degrees and work experience to pursue advanced interdisciplinary research and scholarship. Students taking the Option in Disability Studies will complement their major program area of study with course work which analyses the social construction of disability.

### M.A./M.Sc. in Disability Studies,

### Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Graduates of honours or equivalent programs at the University of Manitoba (or equivalent from other recognized universities) with a minimum Grade Point Average (GPA) of 3.0 in the last 60 credit hours, are eligible for direct admission to a course of study leading to the Master's degree. Students who have completed a University of Manitoba Pre-Master's program with a minimum GPA of 3.0 are also eligible for admission. Pre-Master's programs taken at other universities may be accepted.

Students who wish to pursue the M.Sc. are required to have an undergraduate degree in Science.

Students with undergraduate degrees from a wide range of disciplines – such as Architecture, Arts, Education, Human Ecology, Engineering, Law, Management, Medical Rehabilitation, Medicine, Nursing, Physical Education and Recreation Studies, Science, Social Work and Women's Studies - will be considered eligible to apply if they meet the above requirements.

Students who do not meet current admission requirements may contact Disability Studies for advice on appropriate options.

### Application Deadlines

The deadline for receipt of the program application form and supporting documents in the department for a September admission is March 1 for International students and June 1 for Canadians and Americans as well as permanent residents. For January admission, the deadlines are July 2 for International applicants and October 1 for Canadian applicants. Students who wish to apply for scholarships and fellowships need to have their applications in by February 1 (for a September admission) or one month prior to the University's deadline for the scholarship application.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar.

The Master's Degree in Disability Studies requirements are twenty-four credit hours; eighteen credit hours of required course work, six credit hours of elective course credit, plus a thesis. The six credit hours of elective courses can be taken from a list of approved courses at the 3000, 4000, 5000 or 7000 level.

M.Sc. students will be required to take at least six hours of elective credit hours at the 7000 level in science subjects in those Faculties participating in the M.Sc. The student's Advisory Committee or the Disability Studies Graduate Program Committee may require other additional science courses at the 3000 or 4000 level. It should be noted that



students will normally be required to fulfil 7000 level course prerequisites before enrolling in 7000 level courses.

All academic programs must be approved by the Disability Studies Graduate Program Committee. This is normally done on the recommendation from the student's advisor and/or Advisory Committee following consultation with the student.

### Option in Disability Studies, Admission

The Option in Disability Studies is offered to students in faculties and departments that currently have a graduate program. Upon completion of the requirements, a concentration in Disability Studies will be recorded on the student's transcript. For information concerning the option, interested students are directed to their student advisor or to the Director of Disability Studies.

### Program Requirements

The Option in Disability Studies requirements are DS 7010 (6) Disability Studies and either DS 7020 (3) The History of Disability or DS 7030 (3) Evaluation and Application of Research Methods in Disability Studies.

**DS 7010** Disability Studies Cr.Hrs.6  
(Formerly 162.701) Explores the key concepts and issues in disability studies. Includes a critical examination of models and theories of disability, Canadian and other national laws and international standards, social and economic policy, and professional and service responses.

**DS 7020** History of Disability Cr.Hrs.3  
(Formerly 162.702) Traces the historical development of responses to disability, by the medical/rehabilitation community, the governments, advocacy organizations and others. Canadian history will be the initial framework and the historical developments in other countries (including the UK, France, the USA, the Caribbean) will be used as a comparison. Pre- or co-requisite: DS 7010 (or 162.701)

**DS 7030** Evaluation and Application of Research Methods in Disability Studies Cr.Hrs.3  
(Formerly 162.703) Provides a critical evaluation of quantitative and qualitative research methodologies used in disability studies. Methods to address disability used in different disciplines as well as transformative and empowerment methodologies such as participatory action and feminist disability research will be examined. Pre- or co-requisite: DS 7010 (or 162.701)

**DS 7040** Selected Topics in Disability Studies Cr.Hrs.3  
(Formerly 162.704) One key theme will be chosen for each year from the interests and availability of faculty. Topics could include women with disabilities, international dimensions of disability, disability policy and practice, disability organizing and other topics developed over time. Pre- or co-requisite: DS 7010 (or 162.701)

## Economics

**Head:** Pinaki Bose

**Campus Address/General Office:** 504 Fletcher Argue

**Telephone:** (204) 474 6240

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**Email Address:** [Economics@umanitoba.ca](mailto:Economics@umanitoba.ca)

**Website:**

<http://umanitoba.ca/faculties/arts/departments/economics/>

The Department of Economics offers graduate instruction leading to MA and PhD degrees, as well as a Pre-MA program. Enrolment is limited in order to sustain the flexibility and other advantages of a small graduate program and to tailor the program to individual needs. Students in the program come from Canada and around the world. Departmental funding policies are geared to the maintenance of a broad, international student base.

The Department of Economics at the University of Manitoba is both heterodox and policy-oriented. Faculty are heavily involved in shaping policy locally as well as at the national and international levels. Faculty have strong ties to economic research and forecasting organizations, international aid agencies and institutes for social policy research. Faculty members include neoclassicists, Keynesians, post-Keynesians, Marxists, institutionalists, empiricists, and econometricians. In addition to the standard economics curriculum, graduate students can choose from a variety of approaches and research areas, as well as take advantage of the department's openness to research topics that extend beyond the bounds of the department itself.

### Fields of Research

Faculty interests span the areas of labour economics, macro and micro economics, public finance, development, international trade, econometrics, environmental and resource economics, sustainable development, institutional economics, economic history, history of economic thought, health economics, alternative economic theory, and agricultural economics. See below for PhD fields.

### Research Facilities

The university has a Research Data Centre providing close access to Statistics Canada confidential data files. The department also maintains close links to other departments on campus in order to facilitate student learning in a wide range of areas. Graduate students are encouraged to do interdisciplinary research associated with the Transport Institute, the Natural Resources Institute, the Centre on Aging, and the Labour and Workplace Studies program. These centres offer academic expertise, facilities, grass roots connections, and, occasionally, funding opportunities. PhD fields in the department are classified as: agricultural economics, applied econometrics, applied microeconomics, development economics, and heterodox economics.



### M.A. in Economics, Admission

Applicants with a B.A. (Hons.) degree in Economics from the University of Manitoba, or its equivalent, may be admitted to the M.A. degree program. All M.A. students must successfully complete ECON 6040 as the first course of their program, which will be taken during a two-week period immediately preceding the first term of each academic year. However, applicants lacking the level of education normally required, i.e. B.A. (Hons.) in Economics or equivalent, for entry into the M.A. program or to the M.A. year of a Ph.D. program will be expected to acquire these qualifications in one or more pre-M.A. years.

### Application Deadline Dates

#### September Admission

January 15 (International Students) May 1  
(Canadian/Canadian permanent residents/US Students)

Please send application and all supporting documentation directly to the Faculty of Graduate Studies. Please note that students applying to the Department of Economics must submit 3 letters of reference with their application.

Please note that the Department of Economics does not normally accept students in the January session as the required Math and Theory courses start in the fall.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. Department requirements can be found in the Departmental Supplementary Regulations available from the department.

MA including thesis: Master's in Economics students must complete ECON 6040 and 15 credit hours of coursework. Courses will be at the 7000 level, with the following exceptions. If deemed necessary by the Graduate Studies committee, a maximum of six credit hours may be permitted at the 4000 level if the field is not offered at the 7000 level in Economics or at the 3000 level or above in an ancillary field. Students must also complete a suitable thesis.

MA, without a thesis: Alternatively, candidates may complete the M.A. degree by coursework and research paper. A minimum of 27 credit hours of coursework is required, including ECON 6040 and ECON 7000. Courses will normally be at the 7000 level. If deemed necessary by the Graduate Studies committee, a maximum of six credit hours may be permitted at the 4000 in Economics if the field is not offered at the 7000 level or at the 3000 level or above in an ancillary field.

A minimum of six credit hours of coursework in economic theory at the graduate level is normally required. The theory requirement consists of ECON 7650 and ECON 7722. On

the recommendation of the student's advisor and with the approval of the Graduate Studies Committee, a student completing a thesis may be allowed to substitute an ancillary course for part of the theory requirement.

Ancillary courses are normally selected from disciplines related to Economics and to a candidate's thesis (e.g., political studies, sociology, history, statistics, mathematics).

Second Language Reading Requirement: none

Expected Time to Graduate: one year

### Ph.D. in Economics, Admission

1) Except as provided in 2) below, applicants for admission to the Ph.D. program must have completed the entrance requirements and the program requirements of an M.A. degree in Economics or in Agricultural Economics equivalent to that awarded by the University of Manitoba.

2) In exceptional cases, applications may be considered from students who have completed an Honours degree in Economics equivalent to that awarded by the University of Manitoba. In such cases, the applicant will be required to fulfill, in addition to the requirements below, all coursework requirements for the M.A. degree by comprehensive examination option.

### Application Deadline Dates

#### September Admission

January 15 (International Students) May 1  
(Canadian/Canadian permanent residents/US Students)

Please send application and all supporting documentation to the Faculty of Graduate Studies. Please note that students applying to the Department of Economics must submit 3 letters of reference with their application.

Please note that the Department of Economics does not normally accept students in the January session as the required Theory courses start in September.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. Ph.D. students in Economics must complete:

- A minimum of 24 credit hours of course work at the 7000 level. No more than 6 credit hours may be taken in a department other than Economics as part of this minimum course work requirement, if deemed necessary by the Graduate Studies



committee in consultation with the student's supervisor.

- A minimum of 36 credit hours of 7000 level courses in their M.A. and Ph.D. programs. These 36 credit hours must include:
- A minimum of 12 credit hours in economic theory. The theory requirement will normally be ECON 7650, ECON 7660, ECON 7722, and ECON 7732. Upon the recommendation of a student's advisory committee, the Graduate Studies Committee may permit a student to substitute two of the following for ECON 7660 and ECON 7732: ECON 7670 and ECON 7740.
- 3 credit hours of Econometrics at the 7000 level, 3 credit hours of heterodox economics at the 7000 level and either 3 credit hours of History of Economic Thought or Economic History.

### Fields of Concentration and Candidacy Examinations

Students must present themselves for one set of theory candidacy examinations. The theory examination consists of microeconomic and macroeconomic theory, which are assessed separately. Students must choose two fields of concentration and complete a research paper in one of the fields: Fields from which a student may select are:

Agricultural Economics	Development Economics
Applied Econometrics	Heterodox Economics
Applied Microeconomics	

The Ph.D. in Agricultural Economics is offered with the cooperation with the Department of Agribusiness and Agricultural Economics. For information on faculty, course offerings and specialization, contact the department of Agribusiness and Agricultural Economics.

Second language requirement: none

Expected time to graduation: four years

### Economics -6000 Level

**ECON 6040** Survey of Mathematical Topics for Economists Cr.Hrs.3

(Formerly 018.604) A review of mathematical concepts used in economics, particularly at the graduate level. Topics include linear economic systems and matrix algebra, differentiation and optimisation, integration, economic dynamics and optimisation through time, and difference and differential equations. This course cannot be counted toward the minimum degree requirements for M.A. and Ph.D. degrees. This course is graded pass/fail.

### Economics -7000 Level

**ECON 7000** M.A. Research Workshop Cr.Hrs.3

An examination of research methodology to assist students in understanding the process of research in Economics. Students will complete a research project under direct supervision. This is a required course for students in the M.A. by course work. This course is graded pass/fail.

Prerequisite: permission of department head.

**ECON 7010** Econometrics I Cr.Hrs.3

An advanced course in estimation and hypothesis testing in various regression models. Topics may include: asymptotic distribution theory; ordinary least squares estimation; maximum likelihood estimation; generalized least squares estimation; generalized method of moment estimation; and seemingly unrelated regressions estimation.

**ECON 7020** Econometrics II Cr.Hrs.3

An advanced applied course in cross-section and panel data econometrics. Topics may include logit, probit, heckman selection, and poisson; instrumental variables, difference-in-differences, regression discontinuity; fixed and random effects; dynamic panel models; quantile regression, nonparametric estimation; bootstrapping. Prerequisite: ECON 7010.

**ECON 7032** Econometrics III Cr.Hrs.3

Theory and applications of time-series analysis. Topics may include stationary univariate process; maximum likelihood estimation; Markov-switching models; state-space models; unit root process; vector autoregressive models; spurious regression; cointegration; and vector error correction models. Prerequisite ECON 7010.

**ECON 7040** Topics in Applied Microeconomics I Cr.Hrs.3

Advanced study in a selected topic in applied microeconomics. Topics covered in rotation include, but are not limited to labour economics, health economics, public finance, industrial organization, international trade, environmental economics, evaluation of public policy, production economics and applied game theory. Prerequisite: A grade of C+ or better in ECON 7722 or former ECON 7720 (018.772).

**ECON 7050** Topics in Applied Microeconomics II Cr.Hrs.3

Advanced study in a selected topic in applied microeconomics. Topics to be covered in rotation include, but are not limited to labour economics, health economics, public finance, industrial organization, international trade, environmental economics, evaluation of public policy, production economics and applied game theory. Prerequisite: ECON 7722 or former ECON 7720 (018.772).

**ECON 7060** Advanced Heterodox Theory Cr.Hrs.3

This course is a review and examination of heterodox economic theory. Core topics include the theory of capitalist production, effective demand and economic fluctuations, growth and accumulation, crisis theory, and the state and economic policy.

**ECON 7130** Advanced Development Economics Cr.Hrs.3

Introduction to development economics at the graduate level. A core objective is to provide breadth in terms of the coverage of salient topics in economic development and rigor in terms of the level of analysis. The course presumes a substantive background in the basic tools of economic analysis. This is a required course for doctoral students who intend to make development economics one of their field specializations.

**ECON 7140** Topics in Development Economics Cr.Hrs.3

A generic course title intended to accommodate various topics in development economics. The specific topic will be



chosen by the instructor.

**ECON 7170** Topics in Heterodox Economics I Cr.Hrs.3  
Selected study of advanced work in a selected field of heterodox economics.

**ECON 7180** Topics in Heterodox Economics II Cr.Hrs.3  
Selected study of advanced work in a selected field of heterodox economics.

**ECON 7202** Industrial Organization Cr.Hrs.3  
The emphasis will be on market structures and strategic interaction among firms. Topics such as oligopoly pricing, price discrimination, strategic entry deterrence, product differentiation, advertisement, research and development, auction design, regulation, and anti-competitive behavior will be covered. Students may not hold credit for both ECOBN 7202 and the former ECON 7200 (018.720).

**ECON 7230** Directed Special Studies in Economics Cr.Hrs.6  
(Formerly 018.723) Intensive study of advanced work in a selected field of economics. As the course content will vary from year to year, students may take this course more than once for credit.

**ECON 7300** Directed Special Studies in Economics Cr.Hrs.3  
(Formerly 018.730) First term of ECON 7230 (or 018.723). As the course content will vary from year to year, students may take this course more than once for credit.

**ECON 7350** Public Finance: Public Expenditures Cr.Hrs.3  
(Formerly 018.735) The role of government expenditures and criteria for their evaluation. Public goods theory. Externality problems. Public choice. Benefit-cost analysis. Public enterprising pricing.

**ECON 7360** Public Finance: Taxation Cr.Hrs.3  
(Formerly 018.736) Examination of income, profits, sales, property and other taxes, their allocational and distributional effects. Canadian tax policy. Tax incentives. Resource taxation. Intergovernmental fiscal relations in Canada and elsewhere. Public debt.

**ECON 7430** Advanced Theory of Resource Economics Cr.Hrs.3  
(Formerly 018.743) Economic theory of the development and management of natural resources. Application of capital theory, investment theory, the theory of externalities and decision-making theory to resource utilization and management. A strong background in microeconomics is required. Also offered as ABIZ 7430 by the Department of Agribusiness and Agricultural Economics.

**ECON 7500** Monetary and Financial Theory Cr.Hrs.3  
(Formerly 018.750) The microeconomics of money and other financial assets, in partial and general equilibrium frameworks. Explanation of financial market structure and behaviour with and without costless information. Students may not hold credit for both ECON 7500 (or 018.750) and the former 018.704.

**ECON 7510** Advanced Monetary Macroeconomics Cr.Hrs.3  
(Formerly 018.751) Mainstream and other theories of how money matters to macroeconomics, theory and practice of policy rules for both monetary and other stabilization policy tools. Students may not hold credit for both ECON 7510 (or

018.751) and the former 018.704.

**ECON 7540** Advanced History of Economic Thought Cr.Hrs.3  
(Formerly 018.754) Not currently offered.

**ECON 7610** Approaches, Methodologies and Techniques in Economic History Cr.Hrs.3  
(Formerly 018.761) A review of methodologies, approaches, techniques, and contemporary controversies in economic history.

**ECON 7620** Selected Studies in Economic History Cr.Hrs.3  
(Formerly 018.762) Not currently offered.

**ECON 7630** Theory of International Trade Cr.Hrs.3  
(Formerly 018.763) Theories of trade flow; trade and income distribution; economic growth and changes in trade flows; instruments of trade intervention; international labour and capital movements; and economic integration.

**ECON 7640** International Money and Finance Cr.Hrs.3  
(Formerly 018.764) Analysis of the theory of international money and finance. Assessment of existing international institutions dealing with money and finance. Theory, rationale and evaluation of structural adjustment policies. Prerequisite: ECON 7630 (or 018.763), or both ECON 7500 (or 018.750) and ECON 7510 (or 018.752) (or the former 018.704), or permission of instructor.

**ECON 7650** Advanced Macroeconomic Theory 1 Cr.Hrs.3  
(Formerly 018.765) A review of contemporary macroeconomic theories and their applications; analysis of static equilibrium and disequilibrium models; exploration of such models' implications for cyclical behaviour and for policymaking. Prerequisite: ECON 6040 (or 018.604) which may be waived on demonstration of equivalent mathematical competence.

**ECON 7660** Advanced Macroeconomic Theory 2 Cr.Hrs.3  
(Formerly 018.766) Analysis of cyclical models and of equilibrium growth models, and a review of contemporary theories of stabilization policy. Prerequisite: ECON 7650 (or 018.765).

**ECON 7670** Advanced Macroeconomic Topics Cr.Hrs.3  
(Formerly 018.767) Not currently offered.

**ECON 7690** Structuralist Theories of Development Cr.Hrs.3  
(Formerly 018.769) Study of structuralist classical Marxist and Neo-Marxist theories of development and underdevelopment. Appraisal of the development strategies which follow from the various theories.

**ECON 7722** Advanced Microeconomic Theory I Cr.Hrs.3  
This course will cover topics in theories of consumer demand, production and cost, distribution, market equilibrium, market organization, general equilibrium and welfare. Students may not hold credit for both ECON 7722 and the former ECON 7720 (018.772). Prerequisite: ECON 6040 (018.604) which may be waived on demonstration of equivalent mathematical competence.

**ECON 7732** Advanced Microeconomic Theory II Cr.Hrs.3  
This course will cover topics in game theory. Static and dynamic games with complete or incomplete information will be studied. Topics such as market failure arising from



asymmetric information, firm behavior in oligopolistic markets, auctions, signaling, free riding, externalities, and public goods will be discussed. Students may not hold credit for both ECON 7732 and the former ECON 7730 (018.773). Prerequisite: ECON 7722.

**ECON 7770** Economics of Marx Cr.Hrs.3  
(Formerly 018.777) An intensive study of Marx's mature theory and especially of 'Capital'. 'Theories of Surplus Value', and 'the Grundrisse'.

**ECON 7780** Debates in Marxian Economics Cr.Hrs.3  
(Formerly 018.778) An analysis of the major theoretical debates within the Marxian paradigm.

**ECON 7790** Advanced Labour Economics Cr.Hrs.3  
(Formerly 018.779) A review of the theoretical and empirical foundations of modern labour economics.

**ECON 7800** Labour Problems and Policies Cr.Hrs.3  
(Formerly 018.780) A course dealing with various contemporary problems and controversies in labour economics. Prerequisite: ECON 7790 (or 018.779).

**ECON 7940** Production Economics Cr.Hrs.3  
(Formerly 018.794) Development of static microeconomic theories of the firm, functional forms, aggregation issues, productivity analysis, risk and uncertainty and in introduction to dynamics. The following are emphasized: a rigorous treatment of the models using duality; a critical understanding of the limitations and possibilities for generalizing the models; and relevance of the models for empirical research, especially in agriculture. Also offered as ABIZ 7940 by the Department of Agribusiness and Agricultural Economics. May not be held with ABIZ 7940 (or 061.794) or 018.793 or ABIZ 7130 (or 061.713).

**ECON 7950** Advanced Agricultural Demand Analysis Cr.Hrs.3  
Critical evaluation of economic theory as applied to agricultural demand. Topics include demand systems; equilibrium; product transformation over time, place and form; and price analysis. Also offered as ABIZ 7950 in the Department of Agribusiness and Agricultural Economics. Students may not hold credit for ECON 7950 and any of: ABIZ 7950 or the former ECON 7900 (018.790) or the former ABIZ 7100 (061.710).

## Education - Ph.D.

**Head:** Z.M. Lutfiyya

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**Telephone:** (204) 474 7886

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**Website:** [umanitoba.ca/education](http://umanitoba.ca/education)

**Academic Staff:** Please refer to our website for Academic staff listing: [umanitoba.ca/education](http://umanitoba.ca/education)

For information about graduate programs in the following units: Université de Saint-Boniface, Curriculum, Teaching and Learning, or Educational Administration, Foundations

and Psychology please refer to the table of contents for page numbers.

Education PhD Program Offerings,  
Each year, the Faculty offers a cohort in a specified area of study. The Faculty also considers applications through an individualized, or "ad hoc" route. For more information, see our website <http://umanitoba.ca/education/>

### Ph.D. in Education, Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this *Calendar*, successful applicants must possess:

- an earned Master's degree from a recognized institution (The M.Ed. comprehensive route at the University of Manitoba is typically a terminal degree. That is, it is insufficient, in number and of itself, as evidence of research capacity for admission into the Ph.D. program in Education at the University of Manitoba);
- a minimum Grade Point Average of 3.0 in the last 60 credit hours;
- an appropriate academic background as defined by the program area to which admission is being sought; and
- appropriate research capability as evidenced by: a thesis from a recognized institution; a major research paper equivalent to a thesis from a recognized institution; an independently completed research article published in a refereed journal; or a research product equivalent to one of the categories above; and appropriate occupational experience such as: teaching in schools or non-school settings; post-secondary teaching; practice in school counselling; psychology, or a similar helping profession; educational administration; administrative experience in a government department; or experience equivalent to one of the five categories above.

Admission to the Ph.D. in Education program is competitive. A combination of factors are taken into account in arriving at an admission decision: the applicant's previous academic background; the referees' assessments of the applicant; the ability of the faculty to provide the program of studies and research requested by the applicant; and the availability of a faculty member competent and willing to supervise the program of studies and research of the applicant.

The application deadline date for the Ph.D. in Education program is December 1, for admission in the following September.

### Program Requirements



In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this *Calendar*, students must complete a minimum of 24 credit hours of coursework. The minimum coursework is comprised of a minimum of 12 credit hours in the program area; a minimum of six credit hours in a cognate area; and a minimum of six credit hours of research methods/analysis. A minimum of 18 credit hours must be at the 7000 level. All courses taken in the Faculty of Education must be at the 7000 level or above. Courses taken outside the Faculty of Education must be at the 3000 level or above. A minimum of 12 credit hours of coursework must be taken in the Faculty of Education. Where relevant to the student's area of research and study, students are encouraged to take courses outside of the Faculty of Education of the University of Manitoba.

Residence Requirement: Ph.D. students must devote two terms at the University of Manitoba to full-time study. One term is Fall (September to December), Winter (January to April), or Summer (May to August). Students may not be employed full-time during their residency.

Second Language Reading Requirement: None

Expected Time to Graduate: 3 to 4 years for full-time studies

**EDUC 7030** Doctoral Tutorial in Education Cr.Hrs.3 (Formerly 124.703) A course of directed independent study relevant to a student's area of doctoral specialization. Prerequisite: GRAD 8010 (or 069.801) Candidacy Examination (P).

**EDUC 7040** Current Issues in Mathematics Education Cr.Hrs.6 (Formerly 124.704) An investigation of topics of current theoretical and practical significance in mathematics education. Students will be required to complete a series of explorations, typically involving observation or experimentation in the field, which will be the focus of discussion.

**EDUC 7050** Doctoral Study in Education Cr.Hrs.3 (Formerly 124.705) Directed study of contemporary research and theory in selected areas within the field of education. The content of this course will vary from year to year and will depend upon students' research interests.

**EDUC 7060** Advanced Seminar in Educational Administration 1 Cr.Hrs.3 (Formerly 124.706) A study of alternative conceptions of educational administration, from its origins as a field to the present. Attention will be given both to historical and contemporary theories of administration. Limited to Ph.D. students and compulsory for Ph.D. students with a focus in educational administration.

**EDUC 7070** Advanced Seminar in Educational Administration 2 Cr.Hrs.3 (Formerly 124.707) A consideration of some of the central problems of contemporary social theory and their relationship to the study and practice of educational administration. The course is limited to Ph.D. students and is compulsory for Ph.D. students with a focus in educational

administration. Pre- or corequisite: EDUC 7060 (or 124.706) (C+).

**EDUC 7080** Language and Rhetoric Education Cr.Hrs.3 (Formerly 124.708) Current theories of language with a particular emphasis on concepts of education as discourse and instruction as a rhetorical activity. Prerequisite: admission into the Ph.D. program in Language and Literacy Education.

**EDUC 7090** Language Arts Curriculum Cr.Hrs.3 (Formerly 124.709) How current research, scholarship and theorizing in the areas of language, literature and curriculum studies can assist in developing fresh approaches to reconceiving the nature and purpose of the language arts curriculum as a linguistic, political and cultural enterprise. Prerequisite: admission into the Ph.D. program in Language and Literacy Education.

**EDUC 7100** Reading Education Cr.Hrs.3 (Formerly 124.710) Current trends, curricular issues and new concerns in reading education including the continuing tension between traditional and progressive ideologies. Identifies, from a historical perspective, what has changed, what has not and why; reflects on what is known and what to study; and sets a research agenda for the study of literacy. Prerequisite: admission into the Ph.D. program in Language and Literacy Education.

**EDUC 7110** Doctoral Seminar in Science Education Cr.Hrs.3 (Formerly 124.711) An exploration of current research, scholarship and thinking in science education as exemplified by key themes and current issues related to science and science education. Prerequisite: admission into the Ph.D. program in Science Education.

**EDUC 7120** Current Issues in Science Education Cr.Hrs.3 (Formerly 124.712) An examination of current issues in science education by way of selected topics tailored to individual students' programs and interests. Prerequisite: admission into the Ph.D. program in Science Education.

**EDUC 7130** Language and Identity in Second Language Contexts Cr.Hrs.3 (Formerly 124.713) An exploration of linguistic and cultural issues arising from the internationalization of English as a second language (ESL) teaching and learning, including current research of linguistic imperialism, linguistic human rights, cultural hybridization, sexual politics, and the feminization of speech. Prerequisite: EDUB 7210 (or 132.721) (C+) or permission of instructor.

## Educational Administration, Foundations and Psychology

### Educational Administration

For information about graduate programs in the following units: Université de Saint-Boniface, Curriculum, Teaching and Learning, or Education (Doctoral)

**Head:** (and Graduate Chair) C. Enns

**Campus Address/General Office:** 227 Education Building



**Telephone:** (204) 474 7886

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**Website:** <http://umanitoba.ca/education>

Please see our website for Academic staff: <http://umanitoba.ca/education>

**Academic Staff:** Please see our website for Academic staff: <http://umanitoba.ca/education>

The Department of Educational Administration, Foundations, and Psychology offers specializations in the areas of adult and post-secondary education, educational administration, guidance and counselling, inclusive special education, and the social foundations of education.

#### Fields of Research

The department is a leader in research in a variety of areas including: Equity and Education (race, gender, disabilities); school reform and school improvement; citizenship education; counselling; cross-cultural education; disability studies; and adult & post-secondary/vocational education.

#### M.Ed. in Educational Administration, Foundations and Psychology, Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this *Calendar*, the Department of Educational Administration, Foundations and Psychology has the following admission application deadline dates (see below for the Guidance and Counselling specialization) and admission requirements:

For sessions starting	Canadian applicants	International applicants including US
January	October 1	none
May	none	none
July	February 1	none
September	February 1	January 15

Guidance and Counselling has only one set of admission dates:

July/September	February 1	November 1
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Applicants must possess:

a four-year Bachelor of Education degree, or two-year After Degree Bachelor of Education, or a four-year bachelor's degree (or academically equivalent degree/program) from an academic institution recognized by the Faculty of Graduate Studies, or a three-year undergraduate degree, plus a Post Baccalaureate Diploma in Education (PBDE) with 24-30 credit hours which includes at least 18 credit hours at the 5000 level or if taken outside of Education, 24-30 credit hours of upper level coursework which includes at least 12 credit hours but preferably 18 credit hours at the 4000 level. The total number of credit hours completed including the degree should be 120 credit hours;

- a grade point average of 3.0 or better in the last 60 credit hours of university coursework;
- normally, two years of relevant work experience; and
- appropriate academic and/or professional background for the program area and concentration.

The Guidance and Counselling and Inclusive Special Education specializations require specific prerequisite coursework that must be completed prior to admission.

For individuals who graduate from the Certificate in Adult and Continuing Education (CACE), University of Manitoba complete the following courses:

- EDUA 1560 Adult Learning and Development (3)
- EDUA 1570 Foundations of Adult Education (3)
- EDUA 1580 Program Planning in Adult Education (3)
- EDUA 1590 Facilitating Adult Education (3)
- and an additional 100 hours of elective credit through courses, seminars, and workshops. The Faculty of Graduate Studies recognizes a complete CACE program as 15 credit hours towards the admission requirements for the M.Ed.; that is, giving 12 credit hours for the four core courses completed with a grade of 'B' or better and 3 credit hours (non assessable) for the 100 hours of elective study.

Individuals with a three year undergraduate degree and the four courses listed above must complete an additional 12 credit hours of senior level courses (i.e., 5000 level PBDE courses, 1000 or 2000 level B.Ed. courses, or courses at the 3000 level or above in other faculties) to have the 24 credit hours that are the minimal requirements for satisfying the "honours degree or equivalent" admission requirement. Those with the completed CACE would require an additional 9 credit hours of senior level courses.

Applicants should note that admission to the M.Ed. program is competitive. A number of factors are taken into account in arriving at an admission decision: (1) the capacity of the department to provide the program of study requested by the applicant; (2) the applicant's previous academic background and achievement; (3) the referees' assessment of the applicant; (4) the capacity of the department to provide the applicant with an advisor in the program area; and (5) the applicant's Statement in Support of their application, including relevant professional experience.

#### Transfer of Credit

The granting of advanced credit is subject to the regulations of the Faculty of Graduate Studies and subject to approval of the advisor and department head.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations



Section of this *Calendar*. The M.Ed. in Educational Administration, Foundations and Psychology has a thesis-based route and a course-based route. The M.Ed. comprehensive route at the University of Manitoba is typically a terminal degree. That is, it is insufficient, in number and of itself, as evidence of research capacity for admission into the Ph.D. program in Education at the University of Manitoba.

The following program requirements apply to all specializations in the Department of Educational Administration, Foundations and Psychology. Specific specialization requirements are listed under each specialization below.

M.Ed. programs have a maximum completion time of six years from the date of first registration. Not all courses are offered every year. The graduate course offering schedule is posted on the Faculty's website: <http://umanitoba.ca/faculties/education/media/graduate-future-courses.pdf>. Although we offer many courses yearly, most of our courses are offered in the evening and those wishing to study full-time should consult with the Department Head.

Second Language Reading Requirement: None

Expected Time to Graduate: full-time: 2 - 3 years; part time: 4 - 5 years

#### **Program by Coursework and Thesis**

- A minimum of 18 credit hours of coursework. At least 12 credit hours must be at the 7000 level or equivalent. The remaining 6 credit hours may be at the 5000 level or above, in the Faculty of Education and/or at the 3000 level or above in other faculties.
- As part of their coursework, students must take 3 credit hours of research methodology at the 7000 level in Education or 3000 level or above in other faculties.

#### **Program by Coursework and Comprehensive Examination (Course-based)**

- A minimum of 30 credit hours of coursework. At least 18 credit hours must be at the 7000 level or equivalent. The remaining 12 credit hours may be at the 5000 level, or above, in the Faculty of Education and/or at the 3000 level or above in other faculties.

#### **Adult and Post-Secondary Education Specialization**

The specialization is designed to serve the professional needs of a diverse group of students in continuing, workplace and professional education development; college teaching, administration and student services; university teaching, student services, and administrative management; local and international community development, program delivery, and administration.

Admission and Program Requirements are listed above. Specific course requirements are as follows:

- Required courses: EDUA 7402, EDUA 7404 and EDUA 5800. Course-based students must also take EDUA 7408.

Thesis-based students will select 6 credit hours and course-based students will select 9 credit hours from: EDUA 7406, EDUA 7412, EDUA 7414, EDUB 7416, EDUA 7420, EDUA 7810, EDUB 7390, EDUB 7420, EDUB 7430, EDUB 7450, EDUB 7460, EDUB 7560 or other courses approved by the advisor and department head.

Course-based students will also require 9 credit hours of electives to pursue their specific interests such as TESL, Nursing Education, Medical Education, etc.

#### **Educational Administration Specialization**

The Master's Program in Educational Administration is designed to develop leadership for the province's school systems and to provide students with an in-depth and theoretical understanding of educational administration as both a moral and a technical endeavour.

Students in this program will benefit from their prior experiences as teachers or administrators in an educational organization. This experience need not be restricted to public schools. Experience is important because the program takes seriously the relationship between theory and practice in education.

#### **Provincial Certification**

It is expected that all candidates in the Master's Program with a specialization in Educational Administration will attain provincial certification in Educational Administration (Level 2) by the time they complete their Master's degree. In some instances, this may require additional coursework. Certification is granted by Manitoba Education and not by the Faculty of Education or the University of Manitoba.

Admission and Program requirements are listed above. Specific course requirements are as follows:

- Required courses: EDUA 7010, EDUA 7050 and EDUA 5800. Course-based students must also take 3 credit hours from: EDUA 7200, EDUA 7210, EDUA 7270.
- Thesis-based students will select 6 credit hours, course-based students will select 12 credit hours from: EDUA 5040, EDUA 5100, EDUA 7020, EDUA 7030, EDUA 7040, EDUA 7060, or other courses approved by the program advisor and department head.

#### **Guidance and Counselling Specialization**

The purpose of the Master's Program in Guidance and Counselling is to prepare counselling graduates who are able to integrate critical knowledge and understanding of the



theoretical bases of counselling, the counselling process and outcome research, and current professional issues in counselling, with competent ongoing development of counselling skills. The model of training is scientist-practitioner with an emphasis on reflective practice.

Specifically, the graduate program is designed to help students with the development of generic skills of individual and group counselling; the capacity to conduct research and to interpret current research; a knowledge of the latest developments in counselling and literature in the field; education/training in group leadership and communication skills; a knowledge of career development, career information and job search skills; the principles, processes and methods of interviewing children, adolescents and adults; and the skills of measurement and evaluation.

The program provides an array of supervised practicum placements that support a more specialized experience to meet individual needs and interests. Graduates find employment in a wide range of settings, including schools, community agencies, clinics, hospitals, business and industry, rehabilitation centres, government service and private practice.

In addition to the admission and program requirements listed above, admission to the Guidance and Counselling specialization requires the following prerequisite coursework, which must be completed prior to beginning the M.Ed. program:

- A minimum of 9 credit hours of university coursework at the 5000 level or equivalent consisting of:
- EDUA 5480 Counselling Skills (3)
- EDUA 5500 Theories and Issues in School Counselling (3)
- EDUA 5540 Groups in Guidance (3)

For applicants who have attended the University of Manitoba, the prerequisite coursework can be fulfilled by taking the above courses. Applicants who have attended other universities can fulfil the prerequisite requirements by taking courses equivalent to the ones listed above; the alternate courses, however, will need to be approved by the Guidance and Counselling Area Group.

Specific course requirements for the Master's are as follows:

- Required courses: EDUA 7520\*, EDUA 7550 and EDUA 5800.

Thesis-based students will select 3 credit hours and course-based students will select 18 credit hours from: EDUA 7510, EDUA 7530, EDUA 7540, EDUA 7750, EDUA 7760. Course-based students may also select approved electives at the 5000 level. (NOTE: EDUA 7750 requires advisor approval.)

\*A three hour weekly seminar offered over fall and winter terms taken concurrently with a minimum of 180 hours of supervised practicum experience in a selected placement. Students are required to be available September to April

during the day for a minimum of one to one-and-a-half days per week for the practicum component.

### Inclusive Special Education Specialization

The Master's Program in Inclusive Special Education (ISE) is designed not only to develop skills needed to serve students with special needs directly, but also to develop leadership and research skills for assisting educators and other professionals working on behalf of persons with disabilities. To this end, the graduate courses are designed to enable graduate students to conduct research in a variety of formats and paradigms, to lead in the professional development of their colleagues, to foster program development at their workplaces, and to provide clinical or consultant services to classroom teachers. Courses in the program are focused on topics in inclusive special education as a profession, on applied learning theories and assessment of learning, on critical thinking, and on research methods and findings in this field. Graduates from the program work in a variety of callings: as administrators, clinicians, consultants, program leaders, resource and special education teachers. Many graduates also are active in research, educational program development, advocacy groups, teacher education and professional development.

In addition to the admission and program requirements listed above, admission to the Inclusive Special Education Specialization requires the following prerequisite coursework, which must be completed prior to beginning the M.Ed. program:

A minimum of 18 credit hours of university level coursework at the 5000 level or equivalent with a Grade Point Average of 3.0 (B) consisting of:

- EDUA 5600 Introduction to Inclusive Special Education (6)
- EDUA 5630 Assessment and Instruction in Inclusive Special Education (6); and

6 credit hours from:

- EDUA 5610 Field Experience in Inclusive Special Education (6)
- EDUA 5620 Teaching Children through Alternative and Augmented Communication (3)
- EDUA 5640 Inclusive Special Education: Early and Middle Years (3)
- EDUA 5650 Inclusive Special Education: High School and Transition to Adult Life (3)
- EDUA 5660 Organization and Delivery of Resource Program and Support Services (3)
- EDUA 5670 Strategies for Organizing Inclusive Classrooms and Schools (3)
- EDUA 5680 Promoting Responsible Behaviour in Educational Settings (3)

Specific course requirements for the Master's are as follows:

- Required courses: EDUA 7600 and EDUA 5800



- Thesis-based students will select a minimum of 3 credit hours and course-based students will select a minimum of 6 credit hours from: EDUA 7610, EDUA 7630, EDUA 7650, EDUA 7740, EDUA 7750. (NOTE: EDUA 7740 and EDUA 7750 require advisor approval)
- In addition, thesis-based students will select a maximum of 3 credit hours and course based students will select a maximum of 15 credit hours from: EDUA 5610, EDUA 5620, EDUA 5640, EDUA 5650, EDUA 5660, EDUA 5670, EDUA 5680.
- Students may also choose from a variety of courses not directly related to special education, depending on their interests and career goals. Students should consult the *Undergraduate and Graduate Calendars* for course titles and brief descriptions: EDUA 5070, EDUA 5500, EDUA 5550, EDUA 5570, EDUA 5590, EDUA 5730, EDUA 5740, EDUA 5810, EDUA 5930, EDUA 7710, EDUA 7720, EDUB 5400, EDUB 5770, EDUB 7060, EDUB 7480

### Certification in Special Education

This provision may not apply to applicants with certification requirements in an allied non-teaching field or who are pursuing a M.Ed. in Inclusive Special Education after undergraduate work in an allied non-teaching field. It is expected that most students in the M.Ed. Program with specialization in Inclusive Special Education will attain provincial certification in special education by the time they complete their Master's degree. Students who already have provincial certification at the time of entry into the program will therefore not need to take any prerequisite coursework for this purpose. Those who do not already have provincial certification, however, should expect to take additional credit hours of coursework to fulfil this requirement. The precise number and nature of the additional work will depend on the prior academic background of the student, as well as on the specific courses taken to complete the M.Ed. degree. To assess the additional work needed informally, it is recommended that students consult with their Faculty Advisor early in their program, and also obtain and read a copy of the special education certification guidelines published by Manitoba Education. Official assessment of required coursework, however, can only be done by providing Manitoba Education with a complete set of academic transcripts and requesting a formal assessment from them. Certification is granted by Manitoba Education not by the Faculty of Education or the University of Manitoba.

### Social Foundations of Education Specialization

The aim of Social Foundations of Education is to develop educational researchers who are critical and reflective about educational theory and practice. Theories from the humanities and the social sciences will guide students as they examine, criticize, and explain the meanings, intents and the effects of education in both its institutional and non-institutional forms.

The Master's Program in Social Foundations is designed to promote the understanding of normative educational thought and practice and to probe assumptions about education and schooling. The analysis is multi-dimensional and interdisciplinary.

Admission and Program requirements are those listed above. Specific course requirements are as follows:

- Required course: EDUA 5800
- Thesis-based students will select 6 credit hours and course-based students will select 9 credit hours from: EDUA 7200, EDUA 7210, EDUA 7270.
- Thesis-based students will also select 6 credit hours and course-based students will also select 18 credit hours from: EDUA 7230, EDUA 7240, EDUA 7250, EDUA 7270/7280, EDUA 7300, EDUA 7340; or
- All students may select courses chosen from the Faculty of Arts of the University of Manitoba or from other universities, in particular those within the Western Dean's agreement approved by the program advisor and department head.

### EDUA 7010 Educational Administration as a Field of Study and Practice Cr.Hrs.3

(Formerly 129.701) An overview of educational administration, focusing on a review of some of the main intellectual traditions in the study of educational administration and on an analysis of some of the forces which shape administrative practice. Not to be held with EDUA 7011 (or 129.701) or the former 116.731.

### EDUA 7020 Politics of Education Cr.Hrs.3

(Formerly 129.702) A review of the political features of educational organizations, with emphasis on value systems, community power structures, local government, and political change. Not to be held with EDUA 7021 (or 129.702) or the former 116.702.

### EDUA 7030 Educational Finance Cr.Hrs.3

(Formerly 129.703) Study of economic and financial aspects of education, with emphasis on costs and analysis of expenditures; sources and types of revenue; productivity and efficiency, planning and budgeting. Not to be held with EDUA 7031 (or 129.703) or the former 116.703.

### EDUA 7040 Legal Aspects of Education Cr.Hrs.3

(Formerly 129.704) Studies of legal issues in education. Not to be held with EDUA 7041 (or 129.704) or the former 116.704.

### EDUA 7050 Theoretical Perspectives on Educational Administration Cr.Hrs.3

(Formerly 129.705) A study of the main currents of organization theory and administrative thought and their implications for the study and administration of educational organizations. Not to be held with EDUA 7051 (or 129.705) or the former 116.705.

### EDUA 7060 Organizational Planning and Development in Education Cr.Hrs.3

(Formerly 129.706) A review of approaches to planning and



development in education. Major emphasis is placed on the systematic development of educational organizations. Not to be held with EDUA 7061 (or 129.706) or the former 116.709.

**EDUA 7070** The Analysis of Educational Organizations Cr.Hrs.3  
(Formerly 129.707) The application of methods of organizational analysis to educational institutions. Not to be held with EDUA 7071 (or 129.707) or the former 116.710.

**EDUA 7090** Seminar in Administrative Problems in Education Cr.Hrs.3  
(Formerly 129.709) Application of theoretical concepts in field situations. Not to be held with EDUA 7091 (or 129.709) or the former 116.706.

**EDUA 7100** Topics in Educational Administration (Readings) 1 Cr.Hrs.3  
(Formerly 129.710) A readings course in topics of significance to educational administration.

**EDUA 7110** Topics in Educational Administration (Field) 2 Cr.Hrs.3  
(Formerly 129.711) A projects and field study course in topics of significance to educational administration.

**EDUA 7200** Philosophy of Education Cr.Hrs.3  
(Formerly 129.720) A study of the philosophic foundations of education. Emphasis will be given to various schools of philosophic inquiry as they relate to education and to contemporary philosophy of education issues. Not to be held with EDUA 7200 (or 129.720) and the former 116.735.

**EDUA 7210** Educational Sociology Cr.Hrs.3  
(Formerly 129.721) An examination of the relationship between education and society, with particular attention to ethnicity, family, and socio-economic status and to the role of the school in the socialization process in the Canadian context. Not to be held with EDUA 7211 (or 129.721) or the former 116.736.

**EDUA 7230** Social Criticism in Education Cr.Hrs.3  
(Formerly 129.723) A critical examination of education, giving special attention to various perspectives which challenge conventional interpretation of education and schooling. Students may not hold credit for both EDUA 7230 (or 129.723) and the former 116.738.

**EDUA 7240** Values in Education Cr.Hrs.3  
(Formerly 129.724) Examines the place of values in education. It explores the notion of values, its pervasiveness in education, the approaches to values in education, and the trends and issues related to values in education. Not to be held with EDUA 7241 (or 129.724) or the former 116.732.

**EDUA 7250** Comparative Education Cr.Hrs.3  
(Formerly 129.725) An analysis of educational systems and problems in selected environments in terms of social, political, economic, cultural and other contexts. Students may not hold credit for both EDUA 7250 (or 129.725) and the former 116.714.

**EDUA 7270** Seminar in Cross-Cultural Education 1 Cr.Hrs.3  
(Formerly 129.727) A critical analysis of the social theories and research which form the basis of cross-cultural education. Not to be held with EDUA 7271 (or 129.727) or

the former 116.724.

**EDUA 7280** Seminar in Cross-Cultural Education 2 Cr.Hrs.3  
(Formerly 129.728) A critical analysis of the approaches and research in cross-cultural education. Not to be held with EDUA 7281 (or 129.728) or the former 116.725.

**EDUA 7300** History of Canadian Education from 1867 Cr.Hrs.3  
(Formerly 129.730) A study of the historical development of education in Canada from 1867 to the present. Students may not hold credit for both EDUA 7300 (or 129.730) and the former 116.723.

**EDUA 7330** Topics in Educational Foundations (Readings) 1 Cr.Hrs.3  
(Formerly 129.733) A reading and research course in topics of significance to educational foundations.

**EDUA 7340** Seminar in Educational Thought Cr.Hrs.3  
(Formerly 129.734) Intensive studies of the works of selected educational theorists. Not to be held with EDUA 7340 (or 129.734) and the former 116.719.

**EDUA 7402** Development of Adult Education and Post-Secondary Education Cr.Hrs.3  
A survey structures, theory, philosophies, and curricula of educational systems for adults, as affected by cultural, political, religious, theological and institutional contexts both national and internationally. Not to be held with the former EDUA 7400 (29.740) or or the former EDUA 5400 (129.540).

**EDUA 7404** Lifelong Learning in Educational Settings Cr.Hrs.3  
Explores recent issues, research, and theories about learning across the lifespan, with emphasis on adulthood, as learning is affected by cultural, political, and interpersonal contexts.

**EDUA 7412** Governance of Post-Secondary Education Cr.Hrs.3  
This course examines the history of the governance of post-secondary institutions, the roles of stakeholders in governance, and factors influencing governance in post-secondary institutions today.

**EDUA 7414** Seminar in the Administration of Post-Secondary Education Cr.Hrs.3  
This course has as its focus the application of theoretical concepts of field situations. It will explore administrative skills and their application to selected issues of post-secondary education.

**EDUA 7420** Program Planning in Adult Education Cr.Hrs.3  
(Formerly 129.742) Introduction to factors affecting the planning of programs for adults. Examination of various planning models in relation to principles of adult education. A consideration of theory with major emphasis on directions for planning a program for adults. Local examples will be used. Students may not hold credit for both EDUA 7420 (or 129.742) and the former 116.733.

**EDUA 7510** Seminar in Current Issues in Counselling Cr.Hrs.3  
(Formerly 129.751) Focus on research, theoretical and professional developments; critical contemporary issues;



and specific social problems in counselling. Not to be held with EDUA 7511 (or 129.751) or the former 043.703.

**EDUA 7520** Practicum Seminar in Counselling Cr.Hrs.6 (Formerly 129.752) Supervised experience in both individual and group counselling. Attention is given to analysis of case studies using audio- and video-tapes. A minimum of 180 hours of counselling experience in placement situations is required. This course is graded pass/fail. Not to be held with EDUA 7521 (129.752) or the former 043.704. Prerequisite: EDUA 5480 or EDUA 5481 (129.548) (P) and permission of the instructor. Pre- or Corequisite: EDUA 7550 or EDUA 7551 or the former 129.755 (C+)

**EDUA 7530** Group Counselling: Theory and Practice Cr.Hrs.6 (Formerly 129.753) Study of theories, rationale, objectives, and research. Acquisition of an experiential understanding of group work through participation in class activities. Development of leadership skills in group counselling by conducting counselling groups under supervision. Not to be held with EDUA 7531 (or 129.753) or the former 043.718. Prerequisite: EDUA 5540 or EDUA 5541 (or 129.554) or 043.512 and EDUA 5480 or EDUA 5481 (or 129.548) (P).

**EDUA 7540** Programs in Career Development Cr.Hrs.3 (Formerly 129.754) A practical course designed for helpers wishing a wider knowledge of career development programs. Participants will investigate and evaluate a wide variety of career counselling techniques and programs and will develop specific, innovative programs to meet the needs of their future counselees. Not to be held with EDUA 7541 (or 129.754) or the former 043.719.

**EDUA 7550** Theories of Counselling Cr.Hrs.3 (Formerly 129.755) The objectives of counselling, assessment of counselling outcomes, theories of personality and counselling. Not to be held with EDUA 7551 (or 129.755) or the former 043.701 or 129.750.

**EDUA 7600** Seminar in Inclusive Special Education Cr.Hrs.6 (Formerly 129.760) A forum for the discussion of topics related to disability issues. Opportunity will be provided for students to examine issues related to their particular professional and scholarly needs. Not to be held with EDUA 7601 (or 129.760) or the former 043.705. Pre- or corequisite: 18 credit hours in Special Education at 5000 level or equivalent (C+).

**EDUA 7610** Behavioural Issues in Educational Settings Cr.Hrs.3 (Formerly 129.761) A study designed to give teachers and school counsellors the necessary theoretical background as well as the practical tools to implement programs for children in conflict. Not to be held with EDUA 7611 (or 129.761) or the former 043.707. Pre- or corequisite: EDUA 5600 or EDUA 5601 (or 129.560 or 043.518) or EDUA 5680 or EDUA 5681 (or 129.568 or 043.542) (C+).

**EDUA 7630** Advanced Assessment and Instruction in Inclusive Special Education Cr.Hrs.3 (Formerly 129.763) An advanced study of diagnostic/prescriptive techniques used to ameliorate learning and behavioural problems in special education. Emphasis is on the development and analysis of related instructional delivery systems. Students may not hold credit for both EDUA 7630 (or 129.763) and the former 043.722.

Pre- or corequisite: EDUA 5630 or EDUA 5631 (or 129.563) (C+).

**EDUA 7650** Field Experience in Inclusive Special Education Cr.Hrs.6 (Formerly 129.765) A minimum of 200 hours of supervised placement in an inclusive special education setting. Scheduled seminars facilitate directed study and discussion. This course is graded pass/fail. Prerequisite: 18 credit hours at the 5000-level in Inclusive Special Education or its equivalent (C+). Not to be held with EDUA 7651 (or 129.765) or the former 129.764 or 043.706.

**EDUA 7710** Development in Learning Environments Cr.Hrs.3 (Formerly 129.771) Explores recent advances in developmental psychology as they apply to learning in classrooms and other education-related settings. Emphasis will be given to cognitive change, but motivation and social skill development will also be considered as they relate to cognitive development. Students may not hold credit for both EDUA 7710 (or 129.771) and the former 043.724 or 043.708.

**EDUA 7740** Topics in Educational Psychology 1 Cr.Hrs.3 (Formerly 129.774) A reading and research course in topics of significance to educational psychology.

**EDUA 7750** Topics in Educational Psychology 2 Cr.Hrs.3 (Formerly 129.775) A reading and research course in topics of significance to educational psychology.

**EDUA 7760** Interview Techniques with Children and Adolescents Cr.Hrs.3 (Formerly 129.776) Focuses on the principles, processes and methods of interviewing and counselling individual children, adolescents, parents, school personnel and others. The course aims at integrating theory and practice involving diagnostic and therapeutic communication and observation of behaviour in natural situations with individual children. Not to be held with EDUA 7761 (or 129.776) or the former 043.717. Prerequisite: EDUA 5820 or EDUA 5821 (or 129.582 or 043.505) (C+), EDUA 5550 or EDUA 5551 (or 129.555 or 043.515) (C+), or EDUA 5480 or EDUA 5481 (or 129.548) (P) and EDUA 5490 or EDUA 5491 (or 129.549 or 129.556 or 043.516) (P).

**EDUA 7800** Methods of Educational Research Cr.Hrs.3 (Formerly 129.780) A study of design and data collection techniques for educational research in field settings. Topics covered include quasi-experimentation, survey and observational techniques, simulation, content analysis, and sociometry. Not to be held with EDUA 7801 (or 129.780) or the former 043.709. Prerequisite: EDUA 5800 or EDUA 5801 (or 129.580) or one of the former courses 129.680, 043.610 or consent of instructor.

**EDUA 7810** Evaluating Educational Programs Cr.Hrs.3 (Formerly 129.781) An introduction to current approaches to evaluating educational programs. A review of various evaluation methods/approaches, along with consideration of specific design, ethical, consulting and political issues will be the main focus of this course. Specific skills to be developed are the implementation of educational evaluations, data collection and analysis, and final report writing. Not to be held with EDUA 7810 (or 129.781) and the former 043.726.



**EDUA 7840** Qualitative Research Methods in Education Cr.Hrs.3  
(Formerly 129.784) An introduction to qualitative research methods. While the theoretical underpinnings of qualitative research will be discussed, emphasis is placed on learning to conduct a study including design, collecting and analyzing data, and research ethics. Not to be held with EDUA 7841. Prerequisite: EDUA 5800 or EDUA 5801 (or 129.580) or 043.503 or equivalent (C+) and permission of the instructor.

**EDUA 7850** Design and Analysis of Educational Research (Quantitative) Cr.Hrs.3  
(Formerly 129.785) A study of the use of quantitative methods of analyzing educational research data. Descriptive and inferential procedures commonly used in educational research will be discussed and students will learn to use statistical packages. The course will also address when it is appropriate to employ quantitative designs and present common designs and their associated analyses. Prerequisite: EDUA 5800 (or 129.580) (C+). Students may not hold credit for both EDUA 7850 (or 129.785) and the former 129.681 or the former 43.535 or 43.611.

**EDUA 7860** Advanced Topics in Educational Research Cr.Hrs.3  
(Formerly 129.786) An advanced study of special topics in educational research with an in-depth study of specific topics which will change from year to year. Prerequisite: EDUA 5800 (or 129.580) (C+) and permission of the instructor. Students may not hold credit for both EDUA 7860 (or 129.786) and the former courses 129.783 or 043.711

**EDUA 7870** Measurement and Evaluation in Schools Cr.Hrs.3  
(Formerly 129.787) An advanced study of the principles of measurement and evaluation and their application to teaching and learning in schools. Current issues in measurement and evaluation, including alternative forms of classroom assessment and standard setting, will be discussed. Prerequisite: EDUA 5810 or EDUA 5811 (or 129.581) or the former 043.301 (C+) or equivalent, or consent of instructor.

## Electrical and Computer Engineering

**Head:** U. Annakkage

**Campus Address/General Office:** E2-390 Engineering

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**Email Address:** [enquiries@ee.umanitoba.ca](mailto:enquiries@ee.umanitoba.ca)

**Website:**

<http://www.ece.umanitoba.ca/faculties/engineering/departments/ece/admissions.html>

**Academic Staff:**

<http://www.ece.umanitoba.ca/people/academics>

Please do not contact professors, instead fill-in the **Student Information Form** found at <http://www.ece.umanitoba.ca/node/add/gs-preapplication> to find an advisor. Information you included in this form is sent to faculty members weekly -- it is recommended that you

have a supervisor before formally applying to the ECE Graduate Program.

- You **MUST** list at least one(1) faculty member with whom you wish to study otherwise your paperwork will not reach a faculty member
- You **MUST** describe your research interest
- **DO NOT** put TBD or TBA (et.al.) in either the faculty member or research interest area -- no one will read your information
- Also please do list every faculty member on your Information Form. Please select a research area and one or two professors which best fit your research.
- Please fill-in the Student Information Form as if you were filling in a Statement of Intent and/or CV -- this is the only chance you will have to present yourself to a faculty member. Please refrain from extraneous information
- If a faculty member is interested in what you have written then he/she will contact you and ask you to formally apply with the Faculty of Graduate Studies -- this may take up to 6 weeks.

The department offers programs leading to the Master of Engineering, Master of Science, and Doctor of Philosophy. The department has well equipped research and teaching laboratories. Students may select either a specialized research-oriented activity, an interdisciplinary program, or collaboration with industry or research centres in Canada.

### Fields of Research

The areas of research in the department which are internationally recognized include: applied electromagnetics; atmospheric optics; biomedical engineering; communications engineering; computer architecture and software systems; microelectronics; power apparatus and systems engineering; signal and image processing.

### Research Facilities

The Applied Electromagnetics Laboratories are far the most comprehensive and modern antenna measurement facility of any university nationally and internationally. It consists of eight different test systems housed in three different anechoic chambers. The unique feature of this facility is in its ability to test small and very large antennas in a controlled indoor environment, from 500 MHz to 110 GHz, using conventional Far-Field system, the Compact-Test Range and Near-Field to Far-Field transformation. The test systems include: A large 16ft Compact-Range for testing antennas as large as 6ft and up to 50 GHz, A high precision millimetre wave Compact-Range up to 110 GHz, A conventional Far-Field Range up to 50 GHz, A triple linear-cylindrical-spherical Near-Field Range, A 16-probe Starlab Range for rapid measurements, A 110 GHz Network Analyzer for network characterization, and a small Far-Field range for educational tests.



The merger of biology with engineering sciences and the creation of biomedical engineering has brought innovation to the practice of medicine that could only be dreamed about a decade ago. By many accounts, we are now at the outset of the Biomedical Century and the need for engineers trained in biomedicine is greater than ever. Biomedical Engineering research is interdisciplinary by nature and therefore involves close collaboration with other departments and faculties in the University of Manitoba and associated hospitals. The centre of our activity, however, is the Biomedical Acoustic and Motor Control Laboratory and Biomedical Photonics Laboratory within the Electrical and Computer Engineering department. The Acoustic and Motor Control Laboratory is equipped with biological instrumentation amplifiers/filter, different sensors, acoustic chamber as well as a 2DOF robotic arm, an EEG recording system, and a large network of computers. The Biomedical Photonics Laboratory houses optical test and measurement equipment, various laser sources as well as advanced setups for high-resolution nonlinear microscopy, spectroscopy and optical coherence tomography of biological samples.

Software Systems is an area that represents a strong research program in the Department. The VLSI laboratory is an important component of the research program in Computer Engineering, as well as supporting research areas in Electrical Engineering such as electronics, signal processing and communications. The laboratory includes a network of Sparc workstations for research and education. The laboratory has access to the fabrication of chip designs, via the Canadian Microelectronics Corporation. The current implementation technologies are full-custom CMOS, FPGAs, and integrated sensors. Software CAD packages available include CADENCE, simulators for Neural Networks and many standard university programs such as circuit and logic simulators. There are also facilities for experimental work with mobile robots.

The Computational Intelligence (CI) Laboratory has a collection of robots (a number of individual hexapod, crawling and tractor robots). In addition, the CI Laboratory has seven Intel core 2 PCs, 9 large LCD displays, 7 UPS surge protection power supplies, Wii game controller, two Bamboo tablets, one MacPro laptop, one Lenovo X200 tablet, one HP non-colour printer and one HP 3-way printer. This equipment is used in the design of intelligent systems (both hardware and software) using a number of technologies associated with computational intelligence, namely, Cantor sets, fuzzy sets, near sets, rough sets, neural networks, and evolutionary computing. This research laboratory has its own web page at <http://wren.ee.umanitoba.ca>, that includes access to various research registries and downloadable reports/publications as well as software systems designed in this Laboratory.

The Power Systems and Machine Laboratories are well equipped with several workstations, a real time digital power system simulator (developed at the HVDC Research Centre), a large variable frequency supply, and several well instrumented machine sets. Facilities for developing DSP-based controllers and protection devices are available. The McMath High Voltage Power Transmission Research Laboratory is the largest of its kind amongst Canadian universities and is equipped with generating and measuring

apparatus, including digital data acquisition systems for research on insulation, HV phenomena and diagnostics.

The Data and Signal Compression Laboratory has dedicated and network computers, a high resolution scanner, a video capture facility, a digital camera, a CD-ROM mastering system, and an FPGA development facility. It also has access to a large ATM facility for research.

The Microprobe and Microfabrication Laboratory is a well-equipped laboratory with three faculty members. Topics of interest include scanning probe microscopy, micromachining and microfabrication, semiconductor manufacturing, and high frequency microelectronics and microwave circuit testing. Probe microscopy systems include tunnelling (STM), ultra high vacuum STM, atomic force (AFM), resistive (SRM), capacitive (SCM), and dynamic electrostatic force microscopes used for in situ IC testing. CAD platforms include a number of workstations. CAD tools used are Cadence, L-EDIT and MEMSPRO for IC design, and Libra, Spice, Ensemble and HFSS for high frequency modelling. RF test equipment includes 50 GHz sampling scopes, a 6 GHz Network Analyser and on-wafer probing facilities. Microfabrication capabilities include a cleanroom, thermal evaporation, 3 inch mask aligner, wet etching, oxidation furnaces, electroplating, UHV system, and an inspection microscope. A 1000 sq. foot cleanroom, 6 inch two-sided mask aligner, ICP plasma etching, XeF2 etching, RF sputtering, E-beam evaporation, Alpha-Step surface profiler, 50 GHz millimetre wave probe station, and a wafer saw.

### **M.Sc. in Electrical and Computer Engineering, Admission**

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, a student must normally hold a B.Sc. degree in Electrical or Computer Engineering (or its equivalent) from a recognized university or related fields of study approved by the Department and prospective advisor, from a recognized university. The University minimum GPA requirement for entrance is 3.0; the Department minimum GPA requirement for entrance is 3.5.

### **Application Deadlines**

Potential M.Sc. students should complete the online Student Information Form for Potential Graduate Students (<http://www.ece.umanitoba.ca/node/add/gs-preapplication>) prior to making a formal application to the department.

- Canadian/U.S. students, if invited to submit a formal application by the Department, should submit their application and supporting documentation to the Faculty of Graduate Studies at least four(4) months prior to their intended start date.
- International students, if invited to submit a formal application by the Department, should submit their application and supporting documentation to the Faculty of Graduate Studies at least eight(8) months prior to their intended start date.



### Program Requirements

In keeping with the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, the M.Sc. program in Electrical and Computer Engineering requires a minimum of 18 credit hours of advisor-approved course work as follows:

- REQUIREMENT: 12-credit hours at, or above the 7000 level
  - At least 12 of the 18 credit hours must be from the ECE Department
- ELECTIVES: 6-credit hours (your elective) must be at or above the
  - 300/3000 Level -- if taken from a Department Other than ECE (computer science, physics, math, mechanical engineering, etc.)
  - 400/4000 Level -- if taken in ECE Department
- THESIS: An M.Sc. thesis, which is based on research work normally carried out at this university, is required.
- GRADCON: All full-time M.Sc. students are also required to present a paper, at least once during their program, at the Department's annual graduate student conference, as outlined at the website

<http://www.ee.umanitoba.ca/~gradcon/>.

For complete supplemental regulations on the M.Sc. program in Electrical and Computer Engineering, see website: <http://www.ece.umanitoba.ca/msc>.

Graduate Record Examination: Not Required

Second language reading requirement: NONE

Expected time to graduation: Two Years

### M.Eng. in Electrical and Computer Engineering, Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, a student must normally hold a B.Sc. degree in Electrical or Computer Engineering (or its equivalent) or related fields of study approved by the Department and prospective advisor, from a recognized university. The University minimum GPA requirement for entrance is 3.0; the Department minimum GPA requirement for entrance is 3.5.

### Application Deadlines

Potential M.Eng. students should complete the online Student Information Form for Potential Graduate Students (<http://www.ece.umanitoba.ca/node/add/gs-preapplication>) prior to making a formal application to the department.

- Canadian/U.S. students, if invited to submit a formal application by the Department, should submit their application and supporting documentation to the Faculty of Graduate Studies at least four(4) months prior to their intended start date.
- International students, if invited to submit a formal application by the Department, should submit their application and supporting documentation to the Faculty of Graduate Studies at least eight(8) months prior to their intended start date.

### Program Requirements

This program is meant to satisfy the particular needs of students and practicing engineers wishing to extend their studies on a broad basis of coursework and an engineering project.

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The M.Eng. program in Electrical and Computer Engineering requires a minimum of 24 credit hours of advisor-approved course work as follows:

- MINIMUM: Nine(9) credit hours at or above the 700/7000 level from the ECE department
- MAXIMUM: Nine(9) credit hours of elective courses from
  - the ECE department at or above the 400/4000 level **AND** a maximum of 12 credit hours from other departments at or above the 300/3000 level
  - In exceptional cases, the student may be allowed to take 200/2000 level courses from other departments if pre-approved by the student's advisor
- PROJECT: In addition, the student is required to complete an advisor-approved engineering project and proposal. The effort involved in this project should be at least the equivalent of six(6) credit hours of coursework.

For complete supplemental regulations on the M.Eng. program in Electrical and Computer Engineering, refer to the website <http://www.ece.umanitoba.ca/meng>

Graduate Record Exam (GRE): Not Required

Second language reading requirement: NONE

Expected time to graduation: Two Years

### Ph.D. in Electrical and Computer Engineering,



## Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, a student must normally hold a Master of Science degree in Electrical or Computer Engineering, or related fields of study approved by the Department and prospective advisor, from a recognized university. The University minimum GPA requirement for entrance is 3.0; the Department minimum GPA requirement for entrance is 3.5.

Provisional acceptance of students nearing completion of the M.Sc. degree in Electrical or Computer Engineering may be considered with a minimum University of Manitoba equivalent GPA of 3.0.

## Application Deadlines

Potential Ph.D. students should complete the online Student Information Form for Potential Graduate Students (<http://www.ece.umanitoba.ca/node/add/gs-preapplication>) prior to making a formal application to the department.

- Canadian/U.S. students, if invited to submit a formal application by the Department, should submit their application and supporting documentation to the Faculty of Graduate Studies at least four(4) months prior to their intended start date.
- International students, if invited to submit a formal application by the Department, should submit their application and supporting documentation to the Faculty of Graduate Studies at least eight(8) months prior to their intended start date.

In exceptional cases, a transfer into the Ph.D. program from the M.Sc. program may be recommended for students holding a B.Sc. degree in Electrical or Computer Engineering or related field approved by the advisor and department, provided the following conditions are met: [http://www.ece.umanitoba.ca/phd\\_transfer](http://www.ece.umanitoba.ca/phd_transfer)

- If preliminary admission into a Master's program is being recommended by the advisor with the intention of reviewing the student's status for possible upgrading to a Ph.D. admission; transfer must be indicated on the student's application form at the time of admission otherwise, the student will be required to pay both M.Sc. and Ph.D. program fees.

## Program Requirements

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. The Ph.D. program in Electrical and Computer Engineering depends on student classification as follows:

- **M.Sc.** degree in Electrical or Computer engineering and who have been admitted directly into the Ph.D. program
  - minimum of 12 credit hours of Advisory Committee-approved course work is required
  - 700/7000 level or higher
  - at least 9 of the 12 credit hours must be from the ECE Department
- **B.Sc.** degree in Electrical or Computer Engineering and who are
  - recommended for transfer into the Ph.D. program from the ECE M.Sc. program at this university
  - minimum of 24 credit hours of Advisory Committee-approved course work is required
    - 8 credit hours MUST be at or above the 7000 level
    - 6 credit hours may be
      - Other Dept: at or above the 3000 level from OR
      - ECE Dept: 4000 level elective courses from the ECE department
      - 15 of the 24 credit hours MUST be from the ECE Dept.
      - Credit may be given for approved course work completed at the M.Sc. level
- **Transferred from the M.Sc program**
  - Please see info at

[http://www.ece.umanitoba.ca/phd\\_transfer](http://www.ece.umanitoba.ca/phd_transfer) -- This method offers 3 additional methods of entrance and record keeping

- With an M.Sc. degree and declared on Admissions form
- With an M.Sc. degree, but not declared on Admissions form
- Without an M.Sc. -- transferring to the ECE Ph.D. program from the ECE M.Sc. program

## For all other categories of students

- a minimum of 18 credit hours of advisory committee-approved course work is required
  - of which 12 credit hours must be at or above the 700/7000 level
  - the balance of 6 credit hours must be at or above the 300/3000 level from other



- departments or 400/4000 level elective courses from the ECE department
- **at least 12 of the 18 credit hours must be from this Department.**

**OTHER REQUIREMENT OF THE PH.D. PROGRAM INCLUDE:**

- **A Ph.D. thesis, which is based on research work normally carried out at this university, is required.**
- All full-time Ph.D. students are also required to present a paper AND poster every year at the department's annual graduate student conference, as outlined at the website:

<http://www.ece.umanitoba.ca/gradcon>

For complete supplemental regulations on the Ph.D. program in Electrical and Computer Engineering, refer to the website <http://www.ece.umanitoba.ca/phd>

Graduate Record Exam (GRE): Not Required

Second language reading requirement: NONE

Expected time to graduation: 3.5 Years

## Electrical and Computer Engineering -7000 Level

**ECE 7010** High Voltage Techniques and Insulation Design Criteria Cr.Hrs.3  
(Formerly 024.701) Laboratory generation and measurement techniques related to ac and dc high voltages, conventional and steep front high voltage pulses, composite voltages and pulsed currents. Charge measurements. Test techniques for assessing insulation quality and life.

**ECE 7020** Power Transmission Lines: Phenomenon and Insulation Design Cr.Hrs.3  
(Formerly 024.702) High voltage dc, ac and hybrid transmission line corona modes, electrostatic and ionized field calculations, field effects of overhead transmission lines. Surge propagation including corona effect. Transmission line insulation design to withstand normal/abnormal voltages and conditions. Modern and conventional arrestors. Principles and practice of insulation coordination.

**ECE 7030** Advanced Electrical Machines Cr.Hrs.3  
Magnetically-coupled circuits, energy conversion principles, field generation in ac machines, windings and inductances, reference frame theory, dc machine and dc drives, scalar control of induction machines, vector control of induction machines, drives for special machines.

**ECE 7040** Signal and Data Compression Cr.Hrs.3  
(Formerly 024.704) The course presents the theory of signal and data compression with their applications in engineering, including lossless compression (Shannon-Fano, Huffman, arithmetic and dictionary) and lossy compression, including

scalar and vector quantization. References to sub-band and transform coding (wavelets and fractal) and analysis-synthesis coding will be made.

**ECE 7050** Switching and Automata Theory Cr.Hrs.3  
(Formerly 024.705) The course presents basic material in discrete mathematics and the theory of switching circuits. It provides electrical and computer engineering students with a firm basis in the modern theory of logic design, and illustrates some applications through formal characterization of combinational functions and sequential machines, using contemporary techniques for the automatic synthesis and diagnosis of digital systems.

**ECE 7060** Power system Protection Cr.Hrs.3  
(Formerly 024.706) History and philosophy of power system protection; typical protection schemes; instrument transformers; protection hardware and application; hardware testing techniques; software models and their use in simulation studies.

**ECE 7070** Power System Analysis Cr.Hrs.3  
(Formerly 024.707) Power system operation; load flow analysis; transient stability modeling and simulation using the classical model; detailed machine models for transient stability analysis, modeling of exciters, governors, and FACTS devices for transient stability analysis; methods of transient stability analysis; voltage stability concepts and assessment.

**ECE 7072** Advanced Power Electronics Cr.Hrs.30  
AC/DC and DC/DC converters, switching functions, voltage source converters, advanced PWM techniques, analytical modeling and simulation, control system design, applications of power electronics in motor drives and power systems, additional topics of current interest.

**ECE 7076** Advanced Electric Machines and Drives Cr.Hrs.3  
Magnetically-coupled circuits, energy conversion principles, field generation in ac machines, windings and inductances, reference frame theory, dc machine and dc drives, scalar control of induction machines, vector control of induction machines, drives for special machines.

**ECE 7170** Queueing Systems for Telecommunications Cr.Hrs.3  
Applied stochastic models for queueing systems; analysis of queueing models using matrix-analytic methods and also traditional transform based approaches. Course will focus on applications; how to develop models that represent real communication network problems and how to analyze them.

**ECE 7180** Embedded Systems Engineering Cr.Hrs.3  
(Formerly 024.718) A Structured approach to the design of modern digital systems is presented with specific emphasis on embedding computer applications. Topics will include the formal methodology of digital design together with selected topics from the current research literature

**ECE 7190** Micromachining and MEMS Technology Cr.Hrs.3  
(Formerly 024.719) The course focuses on micromachining and micro-electro-mechanical systems (MEMS). Topics include microfabrication technologies, microactuators, and microsensors. Applications to optical, electrical, mechanical, chemical, and biological systems are discussed.



**ECE 7200** Advanced Wireless Communication Cr.Hrs.3 (Formerly 024.720) The course covers several advanced issues in wireless communication networks. Topics of study will include trends and future of mobile computing, advanced wireless technologies, multimedia wireless LANs, wireless ad hoc networks, energy mgmt, channel coding, privacy issues in wireless networking. Prerequisite: Either ECE 4250 (or 024.425) or ECE 4700 (or 024.470)

**ECE 7202** Cognitive Wireless Networks Cr.Hrs.3 The course will address both the theoretical concepts and system-level implementation issues for cognitive wireless networks. The topics covered will include information-theoretic analysis of cognitive radio systems, challenges and issues in designing cognitive radio systems, architectures and protocols for cognitive wireless networks, distributed adaptation and optimization methods, channel allocation cognitive machine learning techniques, interoperability issues, cross-layer optimization of cognitive radio systems, and applications of cognitive radio networks.

**ECE 7204** Queueing Systems for Telecommunications Cr.Hrs.3 Applied stochastic models for queueing systems; analysis of queueing models using matrix-analytic methods and also traditional transform-based approaches. Course will focus on applications; how to develop models that represent real communication network problems and how to analyze them.

**ECE 7210** Fractal and Chaos Engineering Cr.Hrs.3 (Formerly 024.721) This course presents the general theory of fractals and their applications in engineering, including fractal modelling of complex phenomena, such as dielectric discharges, and fractal image compression. It also relates fractals to chaos and dynamics.

**ECE 7220** Topics in VLSI Test and Fault Tolerance Cr.Hrs.3 (Formerly 024.722) Faults and fault models for VLSI. Test generation algorithms. Design for testability: scan design for sequential circuits; built-in test; testable PLA design. Totally self-checking logic. Fault tolerance in VLSI: yield and performance enhancement through redundancy. System level diagnosis: applications to VLSI processor arrays.

**ECE 7230** Artificial Neural Circuits and Networks Cr.Hrs.3 (Formerly 024.723) Examination of electronic neural networks and related computational systems, both from a circuit theory and from a system-theory perspective. Digital and analog VLSI implementations of neural systems are presented and compared. Connections with other systems from physics, biology and computer science are made.

**ECE 7240** Signal Theory Cr.Hrs.3 (Formerly 024.724) Representation and analysis of deterministic signals: Continuous and Discrete; Random processes and spectral analysis; Bandlimited signals and systems.

**ECE 7250** Information Theory and Applications Cr.Hrs.3 (Formerly 024.725) Development of information theory and the engineering implications for the design of communication systems and other information handling systems.

**ECE 7260** Broadband Communication Networks Cr.Hrs.3 This course provides fundamentals for designing and analyzing broadband communication networks. The major content includes: structure and organization of broadband

communication networks, typical protocols and technologies applied in broadband communication networks mathematical network modeling, and performance analysis. Prerequisite: Undergraduate level Probability Theory & Random Processes.

**ECE 7270** Scattering and Diffraction of Electromagnetic Waves Cr.Hrs.6 (Formerly 024.727) Formulation and analysis of scattering problems by classical methods. Radar cross section of smooth bodies by geometrical and physical optics. Diffraction by edges. Impedance and Leontovitch boundary conditions.

**ECE 7280** Static Compensation in Power Systems Cr.Hrs.3 (Formerly 024.728) Requirements for Static Compensation in Power Systems. The thyristor controlled reactor (TCR) and thyristor switched capacitor (TSC). Advanced GTO thyristor compensators. Operation and control of compensators. Load Compensation, filter design and specifications.

**ECE 7310** Power System Transient Simulation Cr.Hrs.3 (Formerly 024.731) Methods of Network Equation Formulation; Modeling of network nonlinearities and transmission lines; Modeling of electrical machines and controls.

**ECE 7320** Sampled-Data Control Systems Cr.Hrs.3 (Formerly 024.732) Analysis and design of discrete-time systems, compensation to improve stability and performance, introduction to digital logic control.

**ECE 7330** Experimental Methods for Electronic Materials Cr.Hrs.3 (Formerly 024.733) Methods for growing and analyzing electronic materials. Growth will include chemical vapour deposition, diffusion, and plasma processing. Analysis will include capacitance, voltage and current voltage techniques.

**ECE 7370** Memory Devices and Systems Cr.Hrs.3 (Formerly 024.737) Review of computing system architectures. Memory structures and implementations: static, dynamic, synchronous, asynchronous, single and multiport. Testability of memories. Smart memories. Memories for VLSI: configurable and reconfigurable. Case study of a CMOS self-synchronizing RAM.

**ECE 7400** Neural Nets and Neurocomputing Cr.Hrs.3 (Formerly 024.740) Foundations of neural networks. Basic architecture and different structures. Associative networks. Mapping networks. Spatio-temporal networks. Learning and adaptability. Supervised and unsupervised learning. Stability. Adaptive resonance networks. Self-organization. Examples of existing systems. Applications.

**ECE 7410** Phased Array Antennas Cr.Hrs.3 (Formerly 024.741) Linear and Planar Arrays Theory; Pattern Synthesis Techniques, Analysis and Design of Radiating elements, Phase Shifters and Beam-Forming Network; Scanning Techniques; Effect of phase, amplitude and mechanical errors on Array Performance.

**ECE 7430** Experimental Methods of Microwave Engineering Cr.Hrs.3 (Formerly 024.743) Methods for determining: scattering parameters; insertion, mismatch and return loss; cavity



parameters. Detector and mixer performance characteristics. Power measurement. System noise determination. Antenna radiation pattern and gain measurements.

**ECE 7440** Current Research Issues in Electrical Engineering Cr.Hrs.3  
(Formerly 024.744) Presentation of important research developments in the area of Electrical Engineering, selected to complement other established graduate courses. Approval of the head of the department is required to register for this course.

**ECE 7450** High Frequency Integrated Circuit Design and Analysis Cr.Hrs.3  
(Formerly 024.745) Monolithic microwave integrated circuit fabrication and circuit design techniques. Analysis and modeling of microwave passive components and GaAs active devices. High frequency circuit simulation techniques. Basic circuit examples.

**ECE 7460** Real time Process Engineering Cr.Hrs.3  
(Formerly 024.746) Identification, description, and analysis of the behaviour of systems of real-time communicating processes, and the application of real-time process algebras in the design of hardware and software systems.  
Prerequisite: COMP 3430 (or 074.343).

**ECE 7540** Selected Topics of Solid State Electronics Cr.Hrs.3  
(Formerly 024.754) Homojunction and heterojunction phenomena; Gunn effect, organic semiconductors, properties of thin films, quantum electronic devices, space charge limited current devices, and newly developed solid state electronic devices.

**ECE 7560** Topics in Signal Compression and Coding Cr.Hrs.3  
This course covers selected topics in signal compression with emphasis on recent advances: theory and practice of quantization, introduction to rate distortion theory, principles of predictive coding, transform coding and trellis coding, applications, emerging topics including joint source-channel coding, multiple description coding and distributed source coding.

**ECE 7590** Telecommunication Networking Cr.Hrs.3  
(Formerly 024.759) This course will cover issues in the design and analysis of telecommunication networks and systems in terms of physical implementation, protocols, routing algorithms, management, software interfaces, and applications. Focus will be on high speed LAN, WAN and Telecommunication networks using a systems engineering perspective. Prerequisites: although no prerequisites are required, either course ECE 4250 (or 024.425) or COMP 4300 (or 074.430) would be recommended.

**ECE 7650** Current Research in Computer Engineering Cr.Hrs.3  
(Formerly 024.765) Presentation of important research developments in the area of Computer Engineering, selected to complement other established graduate courses in this area.

**ECE 7660** Logic Problem Solving Cr.Hrs.3  
(Formerly 024.766) Introduction to declarative techniques in symbolic problem solving with emphasis on relational representations, query construction, and recursive

formulations of knowledge structures in engineering.

**ECE 7670** Optimization Methods for Computer-aided Design Cr.Hrs.3  
(Formerly 024.767) Constrained optimization of functions of several variables. Optimization methods suitable for the solution of engineering problems by modern digital computers. Both gradient and direct search methods are included.

**ECE 7680** Dielectric Properties and Phenomena Cr.Hrs.3  
(Formerly 024.768) Elementary structure of matter, polarization, response of dielectrics to static and periodic fields, ionization and decay processes, electrical breakdown of gases, liquids, and solids.

**ECE 7700** Nonlinear Systems Analysis 1 Cr.Hrs.3  
(Formerly 024.770) Introduction to nonlinear phenomena; linearization; state-space methods - quantitative and qualitative; introduction to the principal methods of determining stability.

**ECE 7720** Optimal Control 1 Cr.Hrs.3  
(Formerly 024.772) Introduction to optimal control systems; topics will include statement of the control problem, controllability, calculus of variations, Pontryagin's Maximum Principle, and design of optimal controls.

**ECE 7740** Physical Electronics 1 Cr.Hrs.3  
(Formerly 024.774) Fundamental principles. Wave mechanics, statistical mechanics, structure of matter, free electron theory and electron emission, band theory of solids, electrical conduction, and transport phenomena.  
Prerequisite: ECE 3600 (or 024.360) or equivalent.

**ECE 7750** Physical Electronics 2 Cr.Hrs.3  
(Formerly 024.775) Properties of materials. Semiconductors, junction phenomena; ferroelectrics, magnetic materials, superconductivity, optical processes, effects of radiation.  
Prerequisite: ECE 3600 (or 024.360) and ECE 4190 (or 024.419) or equivalent.

**ECE 7780** Microwave Circuits Cr.Hrs.3  
(Formerly 024.778) Circuit properties of microwave transmission systems. Matrix representation and analysis of microwave networks, microwave junctions, resonators, and impedance matching networks.

**ECE 7810** Solution of Fields by Numerical Methods 1 Cr.Hrs.3  
(Formerly 024.781) Numerical integration, differentiation. Finite-difference solutions of the Poisson, Laplace and Helmholtz equations. Initial-value problems. The eigen problem. Examples chosen from electromagnetic, thermal, fluid-flow, stress, and other fields.

**ECE 7880** Distributed Energy Generation Cr.Hrs.3  
Rationale for distributed generations (DG); Distributed electricity generation technologies (Thermal and Renewable); Availability of renewable energy resources; Technical and economic evaluation of DG projects; DG grid integration and protection issues; Interconnection standards Microgrids. Prerequisite: Energy Systems I or equivalent course.

**ECE 7890** Power System Control Cr.Hrs.3  
(Formerly 024.789) The application of modern systems



engineering methods to power system problems.

**ECE 7920** Human Physiology for Engineers Cr.Hrs.3  
(Formerly 024.792) The analysis and measurements of human physiological systems. Anatomical descriptions are limited to those required to support the functional analysis. Mathematical modeling is reinforced by analog and digital computer models.

**ECE 7990** HVDC Transmission 1 Cr.Hrs.3  
(Formerly 024.799) Rectifier-inverter fundamentals. Compounding and regulation. Grid firing control systems. Reactive power requirements. Ground return and electrode design. Transmission lines. Economics and efficiency.

### Electrical and Computer Engineering -8000 Level

**ECE 8000** HVDC Transmission 2 Cr.Hrs.3  
(Formerly 024.800) Protection. Harmonics: telephone interference. Corona: radio and television interference. Analytical methods. Conversion equipment, the use of solid devices. Selected topics from current literature. Prerequisite: ECE 7990 (or 024.799).

**ECE 8010** Advanced Network Synthesis Cr.Hrs.3  
(Formerly 024.801) Mathematical treatment of various approximation techniques, matrix transformation methods applied to equivalent networks of minimum sensitivity or other criteria, theory of multivariable functions, lumped-distributed network synthesis.

**ECE 8050** Topics in Microelectronics Cr.Hrs.3  
(Formerly 024.805) Equilibrium and non-equilibrium processes in semiconductors, properties of junctions and thin films, carrier transport phenomena, effects of traps, and selected topics pertinent to recent literature in microelectronics.

**ECE 8110** Digital Systems Design Cr.Hrs.3  
(Formerly 024.811) Fixed-instruction-set microprocessor design; microprogramming, bit-slice based design; parallel processing and multiprocessing; applications to data acquisition, data logging, and data communications.

**ECE 8130** Statistical Communication Theory Cr.Hrs.3  
(Formerly 024.813) Representations of random processes; signal detection and estimation techniques.

**ECE 8140** Digital Communications and Coding Cr.Hrs.3  
(Formerly 024.814) Fundamentals of information theory; source and channel coding; digital modulation techniques.

**ECE 8150** Digital Signal Processing Cr.Hrs.3  
(Formerly 024.815) Discrete-time linear system theory, digital filter design techniques, discrete Fourier transforms including FFT, discrete Hilbert transform, Walsh-Hadamard transforms high-speed convolution and correlation - techniques.

**ECE 8160** Digital Filters Cr.Hrs.3  
(Formerly 024.816) Theories, techniques and procedures used to analyze, design and implement digital filters in both software and hardware.

**ECE 8190** Topics in Antenna Theory and Design Cr.Hrs.3  
(Formerly 024.819) Antennas as a boundary value problem, antenna parameters, analysis and synthesis methods, antenna measurements.

**ECE 8200** Advanced Engineering Electromagnetics Cr.Hrs.3  
(Formerly 024.820) Solution of wave equation; special theorems and concepts, computer aided analysis.

**ECE 8210** Power Electronic Circuits Cr.Hrs.3  
(Formerly 024.821) Thyristor properties, ac controllers, controlled rectifiers, dc to dc converters (choppers), and inverters. Permission of instructor required. Credit not to be held with ECE 4370 (or 024.437).

**ECE 8220** Digital Image Processing Cr.Hrs.3  
(Formerly 024.822) Digital representation of images. Two-dimensional operations and transforms. Image enhancement, restoration, and coding. Reconstruction from projections. Prerequisite: ECE 3580 (or 024.358) or equivalent desirable.

**ECE 8230** Pattern Recognition and Scene Analysis Cr.Hrs.3  
(Formerly 024.823) Supervised and unsupervised learning techniques. Linear discriminant analysis. Scene analysis methods.

**ECE 8270** Computer Communication Networks Cr.Hrs.3  
(Formerly 024.827) Overview of existing computer networks. Elements of queueing theory. Error, delay, cost and capacity analysis. Fixed assignment schemes. Packet and switched networks. Random access. Satellite networks. Hybrid protocols.

**ECE 8280** Electromagnetic Field Modelling Cr.Hrs.3  
(Formerly 024.828) Coulombian and amperian models for polarized media and magnetized media; uniqueness theorems, formulation and classical methods of analysis of static, stationary and quasistationary field problems; modelling of electromagnetic fields in the presence of moving solid conductors; elements of relativistic electrodynamics.

**ECE 8300** Computer Vision Cr.Hrs.3  
(Formerly 024.830) This course is an extension of ECE 8220 (or 024.822) "Digital Image Processing." Techniques of image modelling, segmentation, texture analysis, matching and inference will be studied.

**ECE 8310** Computer-Aided Design in Biomedical Engineering Cr.Hrs.3  
(Formerly 024.831) Representation of surfaces in space. 3D display methods and hardware. 3D boundary tracing and texture. Biosterometry and stereophotogrammetry in biomedicine. Some aspects of computer-aided manufacturing of prostheses and other topics. Prerequisites: an introductory course in computing or equivalent experience and one year of any physical, engineering or biological science.

**ECE 8320** Advanced Topics in Power Systems Cr.Hrs.3  
(Formerly 024.832) Study of selected topics of recent advances in electrical power systems.

**ECE 8360** VLSI Design Methodology Cr.Hrs.3  
(Formerly 024.836) Design of custom and semi custom Very



Large Scale Integrated (VLSI) circuits and systems including design for testability. Static and dynamic VLSI circuits; software design tools, layout, logic and timing simulation. Prerequisites: ECE 2220 (or 024.222), ECE 4240 (or 024.424), or equivalent.

**ECE 8370** Topics in Biomedical Engineering Cr.Hrs.3 (Formerly 024.837) A discussion of current topics in biomedical engineering. The latest in instrumentation, procedures and practices relevant both to clinical engineering and ongoing research are covered. Prerequisite: ECE 4400 (or 024.440) or consent of instructor.

**ECE 8380** Reflector Antennas Cr.Hrs.3 (Formerly 024.838) Mathematical analysis of common reflector antennas including effects of various types of feed structures.

**ECE 8400** Intelligent Systems Cr.Hrs.3 (Formerly 024.840) Continuation of ECE 7660 (or 024.766) "Resolution Problem Solving," plan formation, default and temporal reasoning as applicable to engineering.

## English, Film, and Theatre

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**Academic Staff:** Please refer to the website for Faculty information: <http://umanitoba.ca/englishfilmmandtheatre>

As a moderate-sized department, English is able to offer M.A. and Ph.D. programs covering a wide range of periods, genres, media, and theoretical approaches. Both scholarly and creative thesis options are offered for the M.A. In addition to teaching (at all levels), publishing, writing, editing, advertising, arts management, acting and entertainment, English graduates have worked in small businesses, corporations, government, the foreign service, research and development, public relations, fund-raising, filmmaking, the National Film Board, and many other areas.

One of the major strengths of the faculty is its commitment to teaching excellence, with three of its current members having been honoured with the University's highest teaching award, and several others having been honoured with Merit Awards, Graduate Teaching Awards, and UMSU Certificates of Teaching Excellence. In keeping with this record, graduate student teachers have also won a number of the Teaching Excellence Awards offered by the Faculty of Arts since 1994.

### Fields of Research

Students are welcome to consider all areas of literary specialization: Canadian literature, American literature, prairie literature, 20th-century literature, 19th-century

literature, 18th-century literature, Milton, medieval literature, film, drama, theatre, post-colonial literature and theory, modern and post-modern literature, literary and critical theory, cultural and media studies, women's writing, and creative writing.

### Research Facilities

University of Manitoba Libraries have extensive holdings in literature, film studies, and theatre. The Libraries provide access to both local and remote databases. Of note are the University of Manitoba Department of Archives and Special Collections and St. John's College Library. The Department of Archives and Special Collections has an extensive holding in Canadian literature. It is particularly good in Canadian prairie literature, the Archives' holdings including a large and growing collection of prairie literary manuscripts.

Our department benefits from close affiliations with the University of Manitoba Institute for the Humanities, the Centre for Globalization and Cultural Studies, and the Centre for Creative Writing and Oral Culture.

The Canadian Literature Archive, a project of the Department of English, Film, and Theatre, is an internet site which serves as a repository for information about Canadian writers, novelists, poets, playwrights, essayists, Canadian literary organizations, magazines, publications, texts, and library archives. The Archive has been online since 1994.

Students are invited to join the Association of Graduate English Students (AGES). The association, which has recently been dramatically reanimated, organizes student publications, graduate colloquia, and other events. The department also operates a media lab and provides a reading room for student and faculty use.

### M.A. in English, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Students with other degrees or backgrounds may be eligible for admission to a pre-Master's program to the satisfaction of the department. Contact the English, Film, and Theatre Department for further information.

### Application Deadlines

Applications of Canadian/U.S. students are to be received in the Faculty of Graduate Studies, complete with all supporting documentation, by January 5th. International students should submit their applications to the Faculty of Graduate Studies, complete with all supporting documentation, by November 1st.

### Program Requirements



Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. Requirements for the M.A. degree in English can be met in one of two ways; **either** a thesis (critical or creative) and 18 credit hours of course work, of which 12 credit hours will normally be graduate English seminars; **or** a major paper and 30 credit hours of course work.

Second language reading requirement: Yes

Expected time to graduate: 2 years

### Ph.D. in English, Admission

In addition to the minimum admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, applicants must normally hold an M.A. degree in English with a GPA of at least 3.5 in their work at the M.A. level.

### Application Deadlines

Applications of Canadian/U.S. students are to be received in the Faculty of Graduate Studies, complete with all supporting documentation, by January 5th. International students should submit their applications to the Faculty of Graduate Studies, complete with all supporting documentation, by November 1st.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. The first year of full-time Ph.D. study will normally include 18 credit hours, at least 12 credit hours of which should be graduate seminars in English literature. This program of studies will be arranged in consultation with the student's advisory committee at a meeting that will take place no later than one week before the start of classes.

Candidacy examinations, consisting of a paper on the student's period of specialization and a paper on the research area, will normally be written in the second year of Ph.D. study. Each paper will be followed by a one-hour oral examination.

Second language requirement: yes

Expected time to graduation: 4 years

### English, Film, and Theatre- 7000 Level

**ENGL 7030** Studies in American Literature Cr.Hrs.3 (Formerly 004.703) A detailed study of an aspect of American Literature. Topics will vary from year to year. Not

to be held with the former ENGL 7020 (004.702). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7050** Studies in Canadian Literature Cr.Hrs.3 (Formerly 004.705) A detailed study of an aspect of Canadian Literature. Topics will vary from year to year. Not to be held with the former ENGL 7040 (004.704) or the former 004.746. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7070** Studies in British Literature since 1900 Cr.Hrs.3 (Formerly 004.707) A detailed study of an aspect of post-1900 British Literature. Topics will vary from year to year. Not to be held with the former ENGL 7060 (004.706). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7090** Studies in Contemporary Literature Cr.Hrs.3 (Formerly 004.709) A detailed study of an aspect of contemporary literature in English. Topics will vary from year to year. Not to be held with the former ENGL 7080 (004.708). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7140** Studies in International Literature Cr.Hrs.3 (Formerly 004.714) A detailed study of an aspect of international literature in English. Topics will vary from year to year. Not to be held with the former ENGL 7100 (004.710). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7160** Studies in Modernism Cr.Hrs.3 (Formerly 004.716) A detailed study of an aspect of Modernism. Topics will vary from year to year. Not to be held with the former ENGL 7150 (004.715). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7170** Studies in Media Cr.Hrs.3 (Formerly 004.717) A detailed study of an aspect of media and literature. Topics will vary from year to year. Not to be held with the former ENGL 7250 (004.725). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7180** Studies in Old English Poetry Cr.Hrs.6 (Formerly 004.718) Studies in Old English poetry. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7190** Special Topics in Literary Figures Cr.Hrs.3 (Formerly 004.719) Focuses on the works of an individual author. Subjects will vary from year to year. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7300** Creative Writing Cr.Hrs.3  
This seminar will foster advanced craft in a variety of literary genres and will include an analytic and a workshop component. Admission will be at the instructor's discretion, based on the submission of a creative portfolio.

**ENGL 7590** Teaching Literature at University Cr.Hrs.0 (Formerly 004.759) Description not available for this course.



**ENGL 7600** Bibliography Cr.Hrs.3  
(Formerly 004.760) Description not available for this course.

**ENGL 7690** Special Topics in Literary Periods 1 Cr.Hrs.3  
(Formerly 004.769) Description not available for this course. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7710** Special Topics in Literary Genres 1 Cr.Hrs.3  
(Formerly 004.771) No description available. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7750** Directed Reading 1 Cr.Hrs.3  
(Formerly 004.775) Directed Reading 1. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7800** Studies in Drama/Theatre Cr.Hrs.3  
(Formerly 004.780) Focuses on drama possibly using some consideration of theatrical practice and performance. Topics will vary from year to year. Not to be held with the former ENGL 7790 (004.779). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7840** Studies in Critical Theory Cr.Hrs.3  
(Formerly 004.784) Explores literary theory. Topics will vary from year to year. Not to be held with the former ENGL 7830 (004.783). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7860** Topics in Cultural Studies Cr.Hrs.3  
(Formerly 004.786) Provides an overview of the theory and practice of cultural studies. Topics will vary from year to year. Not to be held with the former ENGL 7850 (004.785). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7880** Studies in Literature and Film Cr.Hrs.3  
(Formerly 004.788) Brings together literature and film. Topics will vary from year to year. Not to be held with the former ENGL 7870 (004.787). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7900** Studies in Medieval Literature Cr.Hrs.3  
(Formerly 004.790) A detailed study of an aspect of Middle English literature. Topics will vary from year to year. Not to be held with the former ENGL 7890 (004.789). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7920** Studies in Early Modern Literature Cr.Hrs.3  
(Formerly 004.792) A detailed study of an aspect of Early Modern literature. Topics will vary from year to year. Not to be held with the former ENGL 7910 (004.791) or the former 004.723. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7940** Studies in Eighteenth-Century Literature Cr.Hrs.3  
(Formerly 004.794) A detailed study of an aspect of eighteenth-century literature. Topics will vary from year to year. Not to be held with the former ENGL 7930 (004.793). As the course content will vary from year to year, students

may take this course more than once for credit.

**ENGL 7960** Studies in Romanticism Cr.Hrs.3  
(Formerly 004.796) A detailed study of an aspect of romanticism. Topics will vary from year to year. Not to be held with the former ENGL 7950 (004.795). As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 7980** Studies in Nineteenth-Century British Literature Cr.Hrs.3  
(Formerly 004.798) A detailed study of an aspect of Nineteenth-Century British Literature. Topics will vary from year to year. Not to be held with the former ENGL 7970 (004.797). As the course content will vary from year to year, students may take this course more than once for credit.

## Entomology

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The Department of Entomology is the only such in Canada. The Department has strong links with agricultural and environmental research organizations in Winnipeg and across Canada, and is uniquely positioned to provide comprehensive graduate training in entomological research. The Department offers M.Sc. and Ph.D. degrees. In both M.Sc. and Ph.D. programs, students must achieve a high standard in a research project and in a thesis reporting their results. Students must also take some course work, including a course intended to develop written and oral communication skills, to promote critical thinking and to provide exposure to diverse fields of entomology and related sciences.

Graduates of the Ph.D. program from the Department of Entomology occupy academic positions in a number of universities in Canada and elsewhere; others occupy senior scientist positions with Agriculture and Agri-Food Canada, Environment Canada, or other government research and regulatory agencies. Graduates of the M.Sc. program have proceeded to Ph.D. programs elsewhere, while others have entered the workforce following their M.Sc. degree. A high proportion of insect extension specialists in provincial governments in western Canada are graduates of the department's M.Sc. program. Other recent graduates have positions as forest and prairie management ecologists, careers in agribusiness, producer organizations or pesticide companies, or technical positions in research organizations.

### Fields of Research



The research of the Department strikes a balance between basic and applied studies. The Department has faculty in the areas of apiculture and pollination biology; physiological, population and community ecology of insects; insect systematics and evolution; insect-vertebrate interactions; aquatic entomology; landscape ecology of insects; biological control and integrated pest management. Particular areas of focus include honey bee parasite management, insects as agents of biological control, crop and livestock entomology, arthropod ectoparasites of mammals and birds, taxonomy and evolution of parasitoid wasps, and molecular phylogenetics. Adjunct professors associated with the department provide additional depth and breadth in the areas of forest entomology, pheromone chemistry, crop protection entomology, stored product entomology, medical entomology, and the role of insects in aquatic ecosystems.

#### Research Facilities

Departmental research facilities include the Wallis-Roughley Museum of Entomology, controlled environment chambers and an apiary. Other accessible facilities include a scanning electron microscope, pesticide analysis laboratories, livestock, field plots and commercial scale fields, and greenhouse space.

#### M.Sc. in Entomology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

#### Application Deadlines

The Department of Entomology allows students to begin their program on either 1 September, 1 January or 1 May. For admission for each of these start dates, Canadian and U.S. students should send their applications with complete supporting documentation to arrive in the Faculty of Graduate Studies at least three (3) months before the intended start date. International students should send their applications with complete supporting documentation to arrive in the Faculty of Graduate Studies at least seven (7) months before the intended start date. Before making a formal application, students should contact the Department of Entomology to determine what documentation should accompany their application.

#### Program Requirements

The minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. As part of their academic program, students are required to take ENTM 7150 Advanced Entomology 1.

Second language reading requirement: none

Expected time to graduation: 2 - 3 years

Graduate Studies

#### Ph.D. in Entomology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

#### Application Deadlines

The Department of Entomology allows students to begin their program on either 1 September, 1 January or 1 May. For admission for each of these start dates, Canadian and U.S. students should send their applications with complete supporting documentation to arrive in the Faculty of Graduate Studies at least three (3) months before the intended start date. International students should send their applications with complete supporting documentation to arrive in the Faculty of Graduate Studies at least seven (7) months before the intended start date. Before making a formal application, students should contact the Department of Entomology to determine what documentation should accompany their application.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. As part of their academic program, students are required to take ENTM 7220 Advanced Entomology.

Second language reading requirement: yes, although this may be waived.

Expected time to graduation: approximately 3 - 5 years

#### Entomology

**ENTM 7120** Insect Population Management Cr.Hrs.3 (Formerly 038.712) Term papers, tutorials and workshops to study systems of managing populations of injurious and useful insects based upon models of the processes of insect population dynamics. Prerequisite: consent of instructor. Not all courses are offered every year. Please contact the department regarding course availability.

**ENTM 7150** Advanced Entomology 1 Cr.Hrs.3 (Formerly 038.715) A required course for M.Sc. students in Entomology. Students must submit essays and seminars in areas chosen to fit the requirements of their program. They are required to prepare for and participate actively in discussion sessions and other class meetings. Not available for credit in a Ph.D. program.

**ENTM 7200** Advanced Insect Taxonomy Cr.Hrs.3 (Formerly 038.720) Tutorials, laboratory periods and discussion of classification and evolution of insects. Offered 2005-2006. Not all courses are offered every year. Please contact the department regarding course availability.



**ENTM 7210** Special Topics in Entomology Cr.Hrs.3  
(Formerly 038.721) The content of this course will deal with specific topics of entomology at the advanced level.

**ENTM 7220** Advanced Entomology Cr.Hrs.3  
(Formerly 038.722) A required course for Ph.D. students in Entomology. Students must submit essays and present seminars in areas chosen to fit the requirements of their program. They are required to prepare for and participate actively in discussion sessions and other class meetings. Not available for credit in a M.Sc. program.

**ENTM 7230** Advanced Pollination Biology Cr.Hrs.3  
(Formerly 038.723) Tutorials, assignments and discussion periods of current topics relating to the physiology and life history of insect pollinators and their ecological interactions with entomophilous plants. Subjects studied may be selected to fit the interests of individual students. Prerequisite: Consent of instructor.

**ENTM 7240** Advances in Physiological Ecology of Insects Cr.Hrs.3  
(Formerly 038.724) The effect of environmental factors such as temperature, moisture, light and other organisms on the physiology and ecology of insects. Prerequisite: ENTM 2050 (or 038.205) or consent of instructor. Not to be held for credit with ENTM 4520 (or 038.452). Not all courses are offered every year. Please contact the department regarding course availability.

## Environment and Geography

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The Department of Environment and Geography is one of the most dynamic and eclectic research units at the University of Manitoba. The focus of the graduate program is innovative scholarship that contributes meaningfully to our understanding of how we interact with and can influence the world around us. As a department, we strive to be recognized regionally, nationally, and internationally as a centre for excellence in teaching, research and outreach and in integrating physical, biological and human environmental knowledge. This is reflected in our commitment to graduate students and the successes they continue to achieve.

### Fields of Research

Department research activities span a wide range of disciplinary and interdisciplinary activities, including: the evolution of the cultural landscape; aging; maritime shipbuilding and seaports; homelessness; global (and China's) energy supplies; global food and agriculture;

alternative energy sources; replacement of petroleum feedstock in petrochemical industry; speciation, cycling, and bioavailability of trace elements across environmental interfaces; stress ecology and risk assessment in aquatic systems from chemical contaminants, ecosystem functioning and biodiversity impacts of nutrients in riparian and aquatic systems and the ecophysiology of invasive species, animal geographies; applied meteorology; severe weather including precipitation and drought analyses; microclimatology, greenhouse gas source-sink analysis; geographies of health, caregiving and care work in urban and rural settings; human-animal relations; the changing role of zoos and zoo maps; prairie and forest restoration; traditional Aboriginal knowledge; sustainable rural and urban agriculture; risk analysis of GM crops and disease; plant, wildlife and landscape ecology; environmental conservation and ecological restoration; gender and development; environmental health; arctic climate change and system-science studies in polar marine ecosystems.

Researchers in the Department collaborate with a wide variety of other academic, governmental and private institutions, non-governmental and grassroots organizations, and community groups. These include: Networks of Centres of Excellence (NCE – ArcticNet, PrioNET), IPY, NSERC and CFCAS national research networks (e.g. BIOCAP, CASES, IPY-CFL, MITE-RN, COMERN, DRI, ArcticStorms); national climate-related research centres (e.g. HAL, PSPC, MRB and CRB) within the Meteorological Services of Canada (MSC); Department of Fisheries and Oceans facilities (including the Canadian Ocean Climate Chemistry Centre, IOS, FWI); numerous zoos both in Canada, and abroad; Clearwater and Erikson rural communities, Hollow Water and Grassy Narrows First Nations; Spence and Furby urban community gardens; NGOs that include Boreal Forest Network and Council of Canadians, Manitoba Conservation; Parks Canada; Manitoba Hydro; Ducks Unlimited and many others. In addition, the department is a forerunner in research outreach activities, including Schools on Board, a national initiative to engage schools and communities in Arctic science research by interacting with international CASES research teams on board the Canadian Research Icebreaker. Other important collaborations include action research and education with rural communities, farm groups and First Nations across the country, especially the Harvest Moon Society, and environmental NGOs including Council of Canadians, Boreal Forest Network, Saskatchewan Organic Directorate, Status of Women Canada, Manitoba Centre for Health Policy and the Delta Waterfowl Foundation.

Meteorological and marine research involves collaboration with international research networks and agencies (e.g. Universities of Miami (RSMAS), Wisconsin, the Radiometrics Corp., Quebec Oceans, International Polynya Program, IPY-Pan-Arctic Ecosystem Cluster). Other international research involves major ion chemistry with scientists in China; trace element behaviour research in the Himalaya, Nepal and India; energy and food supply in China; agriculture for the Eastern Caribbean; grasslands conservation strategy in North America; international zoo visitor views of conservation; ports and regional development in East Asia; and community-located environmental conservation in Ecuador, Peru, as well as India and Bangladesh.

### Research Facilities



The Department enjoys close collaboration with the Centre for Earth Observation Science (CEOS). CEOS is structured as an interdisciplinary centre through the partnering arrangements with the Departments of Statistics, Botany, Biological Sciences, Soil Science, Civil Engineering, Physics and Applied Mathematics. External partners include Manitoba Natural Resources, the Canadian Wheat Board, Parks Canada, Fisheries and Oceans Canada, MB Hydro as well as those with national and international affiliations such as the Canadian Ice Services, Environment Canada, Canada Centre for Remote Sensing, Canadian Space Agency, National Air and Space Administration, and the Canadian International Development Agency. Because of this extensive network, it is possible to access facilities and equipment far beyond the holdings of the University. Three fully equipped computer laboratories and data-sharing agreements with CEOS partners provide the infrastructure support for research and teaching programs. Students have access to a research laboratory with fully integrated PC and UNIX (IBM RS/6000 and DEC Alpha) work stations, with two calcomp digitizers, slide-output device and plotter. Another laboratory is Pentium based with 15 workstations and a server. Available software includes Arc/Info, PCI Ease/Pace, ER Mapper, Idrisi, ArcView, IDL, Adobe Illustrator and Photoshop.

Faculty within the Department have acquired a vast array of field and laboratory research equipment. A partial list includes a GPS base station, handheld units and a satellite receiving station; radiometers, spectrometers, scatterometers for monitoring of electromagnetic radiation in the solar, terrestrial and microwave wavelengths, atmospheric boundary layer profiling equipment, surface meteorological and energy and CO<sub>2</sub> flux monitoring facilities, infrastructure for gas chromatography (DMS, CO<sub>2</sub>, CH<sub>4</sub>), state of the art calibration facilities, research moorings and buoys, and support craft for sampling on water (jet boats, air boats, zodiaks, etc., ) and land (snowmobiles, trucks, ATV's). Laboratory facilities include a cold laboratory for snow and sea ice microstructure analysis.

A CFI award has enabled the acquisition and operation of (i) the Ultra-Clean Trace Element Laboratory (UCTEL; <http://home.cc.umanitoba.ca/~wangf/uctel>), which is one of the most advanced ultra-trace analytical facilities in the world. NSERC grants have led to the purchase of atmospheric boundary layer profiling equipment and surface heat and mass flux facilities for energy budget and greenhouse gas studies, (ii) the Riparian and Littoral Process Laboratory, which is equipped with stand alone growth facilities and ecotoxicity and field bioassay instrumentation to support research into stress ecology, ecology and ecophysiology, and (iii) the Sea-Ice Environmental Facility (SERF), which is Canada's only experimental sea - ice facility that houses interdisciplinary studies on sea ice in a laboratory setting..

The Environmental Conservation Lab (<http://umanitoba.ca/environment/eci>) focuses on the interface between biological and social sciences, and conducts community-entered research, education, and outreach across North America and in the Global South. Research incorporates extensive fieldwork, spatial analyses at multiple scales of organization, and participatory video making. Several researchers in the Department use the field stations of Delta Marsh, Clearwater, the Experimental Lakes

Area (ELA), Oak Hammock Marsh, and the Manitoba Zero Till Research Association (MZTRA).

### **Master of Environment (M.Env.), Admission**

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, students must have a minimum GPA of 3.25 in the last 60 CH of course work and should be accepted for study by an academic advisor prior to being accepted into the program.

### **Admission Deadlines**

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 1/2 months prior to their intended start date. International students should submit their application and supporting documentation at least 7 months prior to their intended start date. Please see the application deadline chart below.

### **Program Requirements**

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Master of Environment students are required to complete at least 12 credit hours as follows: 6 credit hours from the 7000 level, including GEOG 7360 (53.736) and 6 credit hours of any other course at the 3000-level or higher. Students must attend and present their original research at a department seminar. Students are also encouraged to attend and present at an academic or professional conference or seminar as approved by their advisory committee. In addition, a thesis is required. An oral defence of the thesis is an integral part of the M.Env. examination. Complete supplementary regulations of the program can be found and should be consulted on the Faculty of Graduate Studies website: ([http://umanitoba.ca/faculties/graduate\\_studies/admin/532.html](http://umanitoba.ca/faculties/graduate_studies/admin/532.html)). It is the students' responsibility to read and follow these regulations.

Second Language Reading Requirement: none

Expected Time to Graduate: two years

### **M.Sc. in Environment and Geography, Admission**

Students with an honours degree or equivalent (including a 4-year advanced degree) in Geography (physical geography specialization) or from a program in the Earth or environmental sciences will be considered. The requirement for admission is a minimum GPA of 3.25 in the last 60CH of course work. Students must be accepted for study by an academic advisor prior to being accepted into the program.



### Admission Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 1/2 months prior to their intended start date. International students should submit their application and supporting documentation at least 7 months prior to their intended start date. Please see the application deadline chart below.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. M.Sc. students are required to complete a minimum of 12CH of approved course work plus a thesis. Courses typically include 6CH of 7000-level Departmental courses and 6CH selected from graduate or upper level undergraduate courses from either within the Department or from other departments. Students must attend and present their original research at a department seminar. Students are also encouraged to attend and present at an academic or professional conference or seminar as approved by their advisory committee. All students must complete and defend a thesis that makes a distinctive contribution to the fields of environment and/or geography. Complete supplementary regulations of the program can be found and should be consulted on the Faculty of Graduate Studies website: ([http://umanitoba.ca/faculties/graduate\\_studies/admin/532.html](http://umanitoba.ca/faculties/graduate_studies/admin/532.html)). It is the students' responsibility to read and follow the regulations.

Second Language Reading Requirement: none

Expected Time to Graduate: two years

### M.A. in Geography, Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, students must have a minimum GPA of 3.25 in the last 60 CH and be accepted for study by an academic advisor prior to being accepted into the program.

### Admission Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 1/2 months prior to their intended start date. International students should submit their application and supporting documentation at least 7 months prior to their intended start date. Please see the application deadline chart below.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. M.A. students are required to complete at least 12 credit hours as follows: 6 credit hours from the 7000 level and 6 credit hours of any other course at the 3000-level or higher. Students must attend and present their original research at a seminar offered and advertised at the department level prior to their defence. Students are also encouraged to attend and present at an academic or professional conference or seminar as approved by their advisory committee. In addition, a thesis is required. An oral defence of the thesis is an integral part of the M.A. examination. Complete supplementary regulations of the program can be found and should be consulted on the Faculty of Graduate Studies website: ([http://umanitoba.ca/faculties/graduate\\_studies/admin/532.html](http://umanitoba.ca/faculties/graduate_studies/admin/532.html)). It is the students' responsibility to read and follow these regulations.

Second Language Reading Requirement: none

Expected Time to Graduate: two years

### Ph.D. in Geography, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Students must be accepted by an advisor prior to submitting an application to enter the program. A 3.5 GPA (or equivalent) in their previous 60 credit hours of course work is normally required.

### Admission Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 1/2 months prior to their intended start date. International students should submit their application and supporting documentation at least 7 months prior to their intended start date. Please see the application deadline chart below.

### Program Requirements

In addition to the minimum 12 credit hour course requirement of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, students are required to attend and present their original research at two department seminars. Students are also encouraged to attend and present at an academic and/or professional conference or seminar as approved by their supervisor. These minimum course requirements may be increased on the recommendation of the student's advisory committee or the departmental Graduate Studies Committee. Students are also required to pass a candidacy exam, and complete and successfully defend a dissertation. The dissertation is to be a distinctive contribution to the field of geography and must be of publishable quality.

Second language requirement: none



Expected time to graduation: four years

#### Application Deadline Dates

Session	Start Date	Canadian/US	International
Regular	(September)	May 15	February 1
Winter	(January)	September 15	June 1
Spring	(May)	January 15	October 1

### Environment & Geography-

**GEOG 7010** Selected Topics in Geography Cr.Hrs.3  
Advanced study of a selected topic from any one of the department's fields of specialization.

**GEOG 7030** Regional Analysis Cr.Hrs.3  
A seminar course reviewing theories of regional development which have planning applications. Further, it assesses government policy aimed at regional intervention and notes procedures of evaluation.

**GEOG 7040** Seminar in Population Geography Cr.Hrs.3  
Examination of the spatial and temporal character of demographic controls. Special emphasis will be placed upon the problems faced by developing areas in their attempts to deal with population growth.

**GEOG 7080** Quantitative Methods Cr.Hrs.3  
A discussion of analysis and model construction in the study of urban and rural systems; analysis of socioeconomic and demographic data, construction of measures, and testing of models.

**GEOG 7140** Historical Geography Cr.Hrs.3  
The course is designed to provide a critical understanding of the development, philosophy, and methodology of historical geography.

**GEOG 7180** Methodology of Agricultural Geography Cr.Hrs.3  
The course first provides an understanding of social and economic concepts in agricultural geography, and then examines methods of data collection, sampling techniques, and analysis with relevance to specific research topics.

**GEOG 7200** Environment, Resources, and Population Cr.Hrs.3  
This course discusses the contemporary imbalance between population and resources. The consequences of resource exploitation upon the natural environment are also examined.

**GEOG 7260** Selected Regional Issues in Geography Cr.Hrs.3  
Advanced study of specific issues and problems in selected world regions.

**GEOG 7270** Physical and Synoptic Climatology Cr.Hrs.6  
A survey of advances in climatology providing a foundation for climatic research. An examination is made of principles and problems in physical and synoptic climatology. Two hour lectures and three hour laboratory per week both terms.

**GEOG 7290** Energy Analysis Cr.Hrs.3  
A survey of origins, methods and applications of energy

analysis, a new technique of system energetics designed to provide information for a more efficient use of scarce natural resources.

**GEOG 7310** Geographic Theory and Methodology Cr.Hrs.3  
A discussion of the meaning of explanation in human geography, the status of geography as a science and the construction of theory.

**GEOG 7332** Concepts in Atmospheric Modelling Cr.Hrs.3  
This course will primarily focus on numerical modelling applications and techniques of the Earth's atmosphere with an emphasis on weather prediction. This includes understanding basic modelling terminology, numerical schemes, structure of models, types of models, what is required to run a model, and an introduction to data assimilation and ensemble techniques to weather prediction. Prerequisite: Permission of instructor.

**GEOG 7360** Interdisciplinary Perspectives on Issues in the Environment Cr.Hrs.3  
An intensive examination of research relating to various issues in the environment, this course will challenge students to consider crosscutting themes found in the literature and from their own learning experiences, and apply them to environmental problems.

**GEOG 7380** Advanced Ecotoxicology: Understanding Stress Ecology Cr.Hrs.3  
Ecotoxicology characterizes how organisms interact with anthropogenic and natural stressors in an ecological context. This course is an examination of the fundamental science, approaches and issues being addressed in the field. Students should have a four-year science-based undergraduate degree and be registered in a graduate program. Prerequisite: Permission of instructor.

**GEOG 7400** Field Topics in Arctic Systems Cr.Hrs.3  
Field and practical experience in selected topics of multidisciplinary research in Arctic System Science from science theory to field sampling, to modeling and remote measurements. Focuses on the ocean-sea ice-atmosphere interface and its relationship with the biological and geochemical processes operating in the cryosphere.

**GEOG 7410** Spatial Analysis in Geography Cr.Hrs.3  
The theory and techniques of spatial statistical data exploration, inference and hypothesis testing as they pertain to geographic analysis is explored. The role of spatial analytical techniques in field investigations, GIS and remote sensing applications are discussed. Prerequisites: (GEOG 3680 or 053.368) (C), and (MATH 1300 or MATH 1301 (136.130) (C), or MATH 1500 or MATH 1501 (136.150) (C)), or permission of instructor.

**GEOG 7420** Synoptic Meteorology and Weather Analysis Cr.Hrs.3  
The course covers applied aspects of meteorology in terms of weather analysis and forecasting techniques for synoptic-scales and meso-scales using various meteorological tools. An introduction to severe weather forecasting techniques will also be described. Familiarity with computers is essential. Prerequisite: Permission of instructor.

**GEOG 7440** Climate Change Cr.Hrs.3  
The course will provide an overview of General Circulation Models (GCMs) and how these models are used to study



various aspects of global climate change. More specifically the course will deal with the coupling between the atmosphere, hydrosphere, lithosphere and biosphere from the perspective of Earth System Science.

**GEOG 7450** Boundary-Layer Climatology and Micrometeorology Cr.Hrs.3

A seminar-based course devoted to the study of advanced topics in microclimatology and micrometeorology. Prerequisite: Permission of instructor.

**GEOG 7460** Advanced Methods in Geographic Information Systems Cr.Hrs.3

Weekly two-hour lab. This course focuses on practical application of techniques used in Geographic Information Systems (GIS) and the development of GIS models. The development, testing and presentation of GIS data, models and results are studied. Prerequisite: GEOG 3730 (053.373) (C), or permission of instructor.

**GEOG 7470** Techniques in Climatology Cr.Hrs.3

This course overviews the theoretical basis that underpins the measurement and application of climate elements in micrometeorological and microclimatological research. Prerequisite: Permission of instructor.

**GEOG 7480** Advanced Methods in Remote Sensing Cr.Hrs.3

This course provides instruction in the current theory and application of remote sensing technology to Earth System Science. Emphasis will be placed on the processing and interpretation of remote sensing imagery and the integration of remote sensing data with other spatial data. Prerequisite: GEOG 3200 (053.320) (C), or permission of instructor .

**GEOG 7500** Biogeography Cr.Hrs.3

The course will emphasize principles and approaches to understanding biogeography on a worldwide scale with specific examples from Canadian and Manitoban research. Topics discussed include the physical environment and biological interactions, effects of disturbance and climate change, the geography of biological diversity, evolution and extinction.

**GEOG 7580** Gender and the Human Environment Cr.Hrs.3

From criticalsocial science theoretical positions, this course asks student to examine what we can learn about how humans live on the earth if we see them as gendered. Just as we may also understand humans and their interactions in and with spaces, places and environments through the lenses of race, ethnicity, class,age and /or combinations of these categories with gender. Cannot be held for credit with GEOG 4280. Prerequisite: permission of instructor.

## Family Social Sciences

Focusing on issues that influence health, well being and family relations, the Master of Science (M.Sc.) in Family Social Sciences provides a strong research foundation in family psychosocial health. We study family issues from a multidisciplinary perspective that integrates psychological, sociological and economic theory and research.

A Master's degree in Family Social Sciences prepares graduates for positions in fields such as health promotion, policy analysis, community development, health research, human services administration, program development, and victim services.

### Areas of Study

The graduate program is organized around four major areas of study. Each student selects one area in which to focus both course work and a research thesis.

*Developmental Health* is concerned with the determinants of healthy development throughout life and the implications for prevention and health promotion. Health is broadly defined as social, psychological and physical. The determinants of health are considered in the context of families as they interact with communities and societies.

*Family Resource Management* is focused on the interface between families and their resources - time, energy and money. The interaction of families with societal systems in the economy is emphasized, as are issues that affect family well-being, such as managing stress, making decisions and resolving problems.

*Family Violence and Conflict Resolution* surveys the prevalence, incidence, etiology, and consequences of conflict and violence in family relationships across the life span. Risk and protective factors at the individual, family, community, and societal levels are studied, with an emphasis on violence prevention and conflict mediation.

*Inner City Families and Communities* is designed to increase student knowledge of issues, perspectives and dynamics of individuals and their interactions in families and communities within the inner city.

### Fields of Research

Faculty in the Department of Family Social Sciences use a variety of research methodologies, both quantitative and qualitative. We support observational, interview and survey research, as well as analysis of large data sets and case studies. Through our network of community partnerships, we support community-based research. We have well-equipped observational and computer facilities.

Research interests of the faculty reflect the four major areas of study in Family Social Sciences.

- **Developmental Health:** parent-child relations, parenting and public policy, social and emotional development, developmental psychopathology, sibling relations, aging, death and dying
- **Family Resource Management:** work and family, bankruptcy, gambling, home-based business, consumer economics, financial counselling, time use, economic value of household production, family problem solving, managerial decision making



- **Family Violence and Conflict Resolution:** domestic violence, child maltreatment and exploitation, abuse and neglect of the elderly, children's exposure to conflict and violence, conflict management
- **Inner City Families and Communities:** healthy communities, housing policy, homelessness, street-involved youth, community development, neighbourhoods

#### Ph.D. in Family Social Sciences,

The Department of Family Social Sciences does not offer a Ph.D. program.

### Family Social Sciences

#### FMLY 7002 Family Social Sciences Seminar I Cr.Hrs.0

A monthly interdisciplinary seminar on current issues in Family Social Sciences, involving presentations by faculty and invited speakers from inside and outside the University of Manitoba. Attendance and participation is required for Family Social Sciences students during their first year of their master's program. Course graded Pass/Fail.

#### FMLY 7004 Family Social Sciences Seminar II Cr.Hrs.0

A monthly interdisciplinary seminar on current issues in Family Social Sciences, involving presentations by faculty and invited speakers from inside and outside the University of Manitoba. Attendance and participation is required for Family Social Sciences students during their first year of their master's program. Course graded Pass/Fail.

#### FMLY 7010 Seminar in Family Finance Cr.Hrs.3

(Formerly 062.701) Advanced study on topics related to family financial management. As well as a review of theory and literature in the field, contemporary family issues such as financial abuse, financial addictions, and financial literacy are discussed. A micro-economic perspective and Canadian data sources are used where possible.

#### FMLY 7220 Management of Family Stress Cr.Hrs.3

(Formerly 062.722) Investigates specific stressor events of contemporary families and suggests ways in which families can meet and manage their responses to these events. Applies theories of family stress and of family resource management to frame and evaluate current research and professional practice.

#### FMLY 7230 Work and Family Interrelationships Cr.Hrs.3

(Formerly 062.723) Advanced study of the earning and caring activities of families and how these activities interrelate at the community, provincial, national, and global levels. Emphasis on relating current research to relevant theoretical perspectives and professional practice.

#### FMLY 7500 Evaluation of Family, Health and Social Development Programs Cr.Hrs.3

This course teaches the theory and practice of program evaluation with a focus on family, health, and social development programs. It will emphasize a utilization-focused evaluation approach from a "real world" perspective, including the political and ethical issues related to evaluation. The course will provide a strong theoretical and

practical foundation to evaluation common to family, health, and social development programs. Students will choose a particular field on which to develop an actual evaluation plan with an existing agency, and will produce an evaluation report related to a particular program in their field of interest.

#### FMLY 7510 Research Data Centre Research Methods Part A Cr.Hrs.1.5

This course will introduce the processes and methods involved in using Statistics Canada's confidential master data files at the Research Data Centre (RDC). Students will gain skills in conducting secondary analyses in order to address important health and social policy research questions. Pre- or Co-requisite: Graduate level biostatistics course or equivalent.

#### FMLY 7520 Research Data Centre Research Methods Part B Cr.Hrs.1.5

A continuation of the introduction to the processes and methods involved in using Statistics Canada's confidential master data files at the Research Data Centre (RDC). Students will gain skills in conducting secondary analyses in order to address important health and social policy research questions. Pre-requisite: Successful completion of Part A (FMLY 7510).

#### FMLY 7600 Parent-Child Relationships Cr.Hrs.3

(Formerly 062.760) Advanced study of the nature of parenting and its influence on developmental health. Focus is on theory and research concerned with parenting and parent-child relationships, changes across time, the influence of the context in which parenting occurs, and the effect of the parent-child relationship on developmental health.

#### FMLY 7610 Aging and Families Cr.Hrs.3

(Formerly 062.761) An examination of contemporary issues confronting families with aging family members. Emphasis is on a review of selected empirical studies in specific topic areas. Relevant theoretical perspectives are reviewed and related to the empirical studies.

#### FMLY 7620 Children and Violence Cr.Hrs.3

(Formerly 062.762) An examination of children's experiences of violence at the levels of families, communities and societies. Relevant theoretical and measurement issues are addressed, as well as the developmental outcomes of various forms of violence. The incidence and prevalence of violence in children's lives is examined. Models of prevention, intervention and policy are explored.

#### FMLY 7700 Independent Study Cr.Hrs.3

(Formerly 062.770) Opportunity to pursue a topic independently. Student works with an individual professor on a topic of mutual choice. May include written, oral and field work. See Family Social Sciences Graduate Handbook for regulations.

#### FMLY 7710 Special Topics in Family Social Sciences Cr.Hrs.3

(Formerly 062.771) Opportunity to investigate an area of family social sciences not usually covered in the curriculum. May be repeated by a student if the topic changes.

#### FMLY 7800 Family Violence Cr.Hrs.3

(Formerly 062.780) Advanced study of current topics in family violence over the life course. Topics may include child



abuse, sibling abuse, parent abuse, courtship violence, partner violence, and elder abuse. Emphasis is on understanding and critiquing current theory and research.

**FMLY 7810** Conflict and Mediation in Families Cr.Hrs.3 (Formerly 062.781) Examination of conflict origin and manifestation in family relationships throughout the lifespan. Includes a review of spouse/partner, parent-child and sibling interaction patterns and current family mediation models.

**FMLY 7920** Globalization, Families and Communities Cr.Hrs.3

This course examines the effects of globalization on families and communities from an interdisciplinary perspective. It has been implicated as one cause of inequality, indebtedness, marginalization, unemployment and homelessness. This course examines how responses to the challenges and opportunities of globalization affect the well-being of families and communities.

**FMLY 7930** Social Development in Theory and Practice Cr.Hrs.3

This advanced seminar examines the concepts and practices of social development in the real world. Specifically, it examines the interplay between theory and practice and the epistemological underpinnings of social development research, programs, and policies as applied to families and communities. Case studies are assessed and critiqued.

## Fine Arts

School of Art

**Program Director:** Paul Hess

**Campus Address/General Office:** Room 313 ARTlab

**Telephone:** (204) 474-9367

**Fax:** (204) 474-7605

**Email Address:** [mfa\\_info@umanitoba.ca](mailto:mfa_info@umanitoba.ca)

**Website:** <http://umanitoba.ca/schools/art>

**Academic Staff:** Please refer to the website for Faculty information: <http://umanitoba.ca/schools/art>

The School of Art, established in 1913, is Western Canada's oldest art institution. Originally known as the Winnipeg School of Art, it has occupied a key role in the development of Canadian artists during the twentieth century. In 1950 it affiliated with the University of Manitoba and since has been known simply as the School of Art.

Its location in the city of Winnipeg, at the geographical centre of Canada, provides a culturally diverse environment that encourages an outward looking engagement with the global community. The School emphasizes traditional grounding in skills-based visualization and art historical knowledge connected to contemporary research in creative practices in art, design and scholarly activities. Undergraduate programs include Bachelor of Fine Arts, Bachelor of Fine Arts Honours, Bachelor of Fine Arts, Art History, Bachelor of Fine Arts Honours, Art History, and Diploma of Art.

The School of Art graduates energetic artists, scholars and designers who travel beyond the region to establish successful careers and make significant contributions to local, national and international cultural communities. The School of Art is committed to advancing excellence in creativity, research, critical thinking and knowledge in the service of the Winnipeg community and, through its alumni, the local and national contexts and the global cultural community.

### Fields of Creative Work and Research

The School of Art offers a newly established Master of Fine Art (M.F.A.) in studio practice, a two-year, fulltime program. The M.F.A. program provides facilities, instruction and time for concentrated work in diverse studio practices. Within traditional and emergent materials, modes of technology and expression, our studio culture promotes and supports individual research and imagination. Additionally, students may find opportunities to collaborate with researchers in other faculties at the University.

### Research Facilities

The studios and lab spaces at the School of Art are equipped with specialized equipment for the various disciplines of the school. Our new principal facility, ARTlab, also offers students and faculty access to digital technologies and upgraded space for collaboration, experimentation and research, including animation and advanced computer-aided expression. Additional studios located at the Art Barn, FitzGerald Building and the Ceramics/Sculpture building augment those in ARTlab.

The School of Art funds and houses The School of Art Gallery, a professional exhibition space which presents work of historical and contemporary importance. The exhibition facilities also include vaults to house the School's collection of artworks and the FitzGerald Study Collection.

### Master of Fine Art Program, Admission:

Admission requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar.

Persons with a minimum of a Bachelor of Fine Arts Honours degree (or equivalent) or a Bachelor of Arts Honours with studio major from a recognized university, with a minimum G.P.A. of 3.0 (B) in the last 60 credit hours of study may apply for admission to the M.F.A. program. Graduates of the University of Manitoba Bachelor of Fine Arts Honours program are encouraged to have at least three years of post-degree professional studio experience. Admission decisions are based on the qualifications of the applicant as well as the ability of the School of Art and the University of Manitoba to serve the applicant's intended program of study and area of specialization.

### Application Deadlines:



Applications should be sent to the Faculty of Graduate Studies. Applications for admission are considered only for a September program start.

The deadline by which all required materials must be submitted is January 15 for all applicants. The Graduate Admissions Sub-Committee will consider only those applications that are complete and properly documented by the deadline. Late applications may be considered from Canadian/US applicants if space permits. Due to the time required to obtain requisite visas and permits, this opportunity cannot be extended to international applicants.

In addition to the admission requirements of the Faculty of Graduate Studies, the following materials are required: an artist's portfolio, a curriculum vitae, a statement of purpose, three letters of recommendation and, if necessary, an interview.

### Program Requirements

The program is designed to be completed in two years of full-time study and students are expected to continue their research through the spring and summer. Part time students are not accepted into the program.

Graduate students must complete 21 credit hours of required coursework and 6 credit hours of electives as well as the Master of Fine Arts Thesis/Studio Exhibition, which is the thesis.

STDO 7010 Studio Concentration 1 Cr. Hrs. 3

STDO 7020 Studio Concentration 2 Cr. Hrs. 3

STDO 7030 Studio Concentration 3 Cr. Hrs. 3

STDO 7040 Studio Concentration 4 Cr. Hrs. 3

STDO 7110 Graduate Seminar 1 Cr. Hrs. 3

STDO 7120 Graduate Seminar 2 Cr. Hrs. 3

STDO 7130 Graduate Seminar 3 Cr. Hrs. 3

GRAD 7200 M.F.A. Thesis/Studio Exhibition

Elective Course offerings: 6 credit hours required

Approved graduate level elective courses may be taken in the School of Art, or with written permission, in another faculty at the University of Manitoba.

### Fine Arts

**STDO 7010** Studio Concentration 1 Cr.Hrs.3  
Advanced individual instruction and critique in the student's

chosen studio area by faculty and visiting artists.

**STDO 7020** Studio Concentration 2 Cr.Hrs.3  
A continuation of Studio Concentration 1. Advanced individual instruction and critique in the student's chosen studio area by faculty and visiting artists.

**STDO 7030** Studio Concentration 3 Cr.Hrs.3  
A continuation of Studio Concentration 2. Advanced individual instruction and critique in the student's chosen studio area by faculty and visiting artists.

**STDO 7040** Studio Concentration 4 Cr.Hrs.3  
A continuation of Studio Concentration 3. Advanced individual instruction in the student's chosen studio area, culminating in the thesis exhibition.

**STDO 7110** Graduate Seminar 1 Cr.Hrs.3  
An investigation of contemporary art concepts in the context of the studio program of work.

**STDO 7120** Graduate Seminar 2 Cr.Hrs.3  
A continuation of Graduate Seminar 1. An investigation of contemporary art concepts in the context of the studio program of work.

**STDO 7130** Graduate Seminar 3 Cr.Hrs.3  
A continuation of Graduate Seminar 2. A further investigation of contemporary art concepts in the context of the studio program of work.

**STDO 7210** Themes in Contemporary Art Studio Cr.Hrs.3  
Individual pursuit of studio investigations under a specific theme.

**STDO 7230** Contemporary Art Theory Cr.Hrs.3  
An examination of art theory from structuralism, post-structuralism, semiotic, sociological and psychoanalytic methods.

**STDO 7300** Special Topics in Fine Art Cr.Hrs.3  
Varying from offering to offering, this course will cover significant topics in Fine Art.

### Fine Arts -Graduate Studies

**GRAD 7000** Master's Thesis Cr.Hrs.0  
(Formerly 069.700) Should show in general, that the student has mastery of the field and is fully conversant with relevant literature. The process, schedule, format, and style must meet the requirements of the Faculty of Graduate Studies. After approval of the thesis by the thesis examining committee and the completion of any revisions required by that committee, two copies of the thesis must be submitted to the Graduate Studies general office. Thesis students must pass an oral examination on the subject of the thesis and matters relating thereto as prescribed by the department. This course is graded pass/fail.

**GRAD 7010** Comprehensive Examination Cr.Hrs.0  
(Formerly 069.701) Takes the form of an exercise in the practical application of knowledge and skills, involving the careful definition of a problem and a report on the results in a manner suitable for evaluation by an examining committee. The comprehensive examination is an independent work, for an architectural project selected to demonstrate professional



knowledge and skills, culminating in a public presentation. A faculty member serves as an advisor. Consultation, advice, and criticism will be provided by other members of the Faculty and specialized professionals in the various technical and related fields. This course is graded pass/fail.

**GRAD 7020** Master's Re-registration Cr.Hrs.0  
(Formerly 069.702)

**GRAD 7022** Master's Re-registration Cr.Hrs.0  
MBA and MPA students who are not registering for any courses in Fall and/or Winter terms must register for GRAD 7022 in order to retain status.

**GRAD 7030** Master's Practicum Cr.Hrs.0  
(Formerly 069.703) Takes the form of an exercise in the practical application of knowledge and skills, involving the careful definition of a problem and a report on the results in a manner suitable for evaluation by an examining committee. This course is graded pass/fail.

**GRAD 7050** M.Eng. Project and Report Cr.Hrs.6  
(Formerly 069.705)

**GRAD 7060** Diploma Re-registration Cr.Hrs.0  
(Formerly 069.706)

**GRAD 7090** Design Thesis Cr.Hrs.0  
The Design Thesis is an independently driven creative work developed within a focused subject of inquiry and directed by architectural questions. It is carried out through intensive research, study, and design explorations that culminate in a thoroughly developed architectural proposition. It is to be fully recorded in a final document.

**GRAD 7200** MFA Thesis/Studio Exhibition Cr.Hrs.0  
The MFA Thesis is comprised of a written statement and visual thesis that must show that the student has developed an original contribution to knowledge in visual art. The process, schedule, format, and style must meet the requirements of the Faculty of Graduate Studies. Thesis students must pass an oral examination on the subject of the written statement and visual thesis. This course is graded pass/fail.

**GRAD 7300** Ethics Tutorial (online) - Human Research Protection Program (CHRPP) Cr.Hrs.0  
Applicable to all disciplines of research involving humans. Offers a review of the principles of human research participant protection. Online tutorial with no pre- or co-requisites. Certificate available to print upon completion. Course graded pass/fail.

## Food Science

**Head:** R.G. Fulcher

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**Website:** [http://umanitoba.ca/food\\_science/](http://umanitoba.ca/food_science/)

**Academic Staff:** Please refer to the website for Faculty

information: [http://umanitoba.ca/food\\_science/](http://umanitoba.ca/food_science/)

Food is a universal necessity and the study of its various properties will continue to flourish. The Department of Food Science offers graduate degrees at the masters and doctorate levels. The general program in Food Science involves studies of the physical, chemical or biological characteristics of food during all phases of manufacturing and processing - starting with the raw materials and ending in consumer products. Uniquely positioned in the Faculty of Agricultural and Food Sciences, the Department of Food Science develops and evaluates value-added opportunities for agricultural food products. New product development and food process improvement are important national and international priorities and the Department will continue its commitment to the training of highly qualified personnel in these areas.

Students graduating with an M.Sc. or Ph.D. in Food Science are readily employable in industry, government or in academic positions. Most students have acquired jobs prior to completion of their graduate degree requirements. Recent graduates have gone on to key research positions in major corporations or taken administrative or management positions (e.g., quality assurance and product development technologists).

### Fields of Research

Expertise in the Department of Food Science is established in four major areas of study: cereal and pulse chemistry (including chemistry of proteins, carbohydrates and antioxidants), food processing, and food microbiology/safety. Chemistry projects investigate the functional roles played by major food constituents, how these properties translate into final food characteristics, including quality and potential new uses. Key projects examine proteins in cereal and pulse fractions as well as carbohydrates and antioxidants in a variety of crops. Considerable emphasis is placed on the functional relationships among components in raw and processed foods, including the structure and organization of air cells ("bubbles"), hydration mechanisms, and distribution of soluble and insoluble fibres, among other properties. Many projects in the Department are multidisciplinary and interdepartmental, involving partners in the Richardson Centre for Functional Foods and Nutraceuticals, Departments of Physics & Astronomy, Animal Science, Human Nutritional Sciences, and Soil Science, to name only a few. Processes have also been developed to assist local producers and manufacturers of dairy, cereal, and pulse products as well as a number of emerging prairie products. Microbiological studies examine food safety issues (survival of bacterial pathogens like *Listeria*, *E.coli* 0157:H7, *Salmonella*) as well as food preservation technology to inhibit spoilage organisms in fresh and cured meat products.

### Research Facilities

The Food Science Department houses up-to-date laboratory facilities for chemical, textural and microbiological analyses of raw foods (agricultural materials) and/or food products (e.g., dairy, bakery, extruded or meat products). In addition, the Department has two pilot plants, one being used primarily for vegetable, fruit, cereal, pulse and meat studies,



while the other is dedicated to dairy product development and research.

### **M.Sc. in Food Science, Admission**

In addition to the admission requirements of the Faculty of Graduate Studies (found in the Academic Guide section of this Calendar), entrance into the M.Sc. programs requires a bachelor's degree from a recognized food science department or the equivalent. Applicants with a four-year bachelor's degree from a non-food science department or the equivalent may be required to complete a pre-M.Sc. program in the Food Science Department (usually of one academic year) or take additional food science courses in the M.Sc. program in order to develop suitable knowledge in food science.

### **Admission Deadlines**

The Department recommends that Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

### **Program Requirements**

There are two types of Master's programs in the Department of Food Science:

#### **Thesis**

Thesis projects may be of a basic research type or of an applied or practical nature relating to the chemistry, physics and/or microbiology of food raw materials, processes and/or products.

The thesis program requires a minimum of 12 credit hours of coursework, this to include at least 6 credit hours in Food Science 7000 level courses, an additional 3 credit hours at the 7000 level, and at least three credit hours in ancillary courses at the 7000, 6000, 4000 or 3000 levels. The thesis research topic shall be assigned within an area of interest to the student and pertinent to departmental research objectives. All M.Sc. students are required to take FOOD 7130 Food Science Seminar.

#### **Non-thesis**

Additional coursework plus practical work terms and a comprehensive examination are substituted for a research project and written thesis.

The non-thesis program requires a minimum of 30 credit hours of coursework. Of this total, a minimum of 15 credit hours must be at the 7000 level in Food Science with the remaining courses to be approved by the student's advisory committee.

Second language reading requirement: none  
Expected time to graduation: two years

### **Ph.D. in Food Science , Admission**

In addition to the admission requirements of the Faculty of Graduate Studies (found in the Graduate Studies Regulations Section of this Calendar), the student must normally hold a research-based Master of Science degree in the general areas of food or nutritional sciences from a recognized university. The student must attain a minimum University of Manitoba equivalent GPA of 3.5 in Masters' coursework. Students with a Master of Science in a different scientific discipline will be considered by the Food Science Graduate Studies Committee on a case by case basis. Students with an honours degree from the University of Manitoba or equivalent may be accepted directly into the PhD program.

### **Admission Deadlines**

Canadian/U.S. students should submit their application and supporting documentation to the Department at least 4 months prior to their intended start date. International students should submit their application and supporting documentation to the Department at least 7 months prior to their intended start date.

### **Program Requirements**

All students are required to take 12 credit hours of courses at the 7000 level. Of these 12 credit hours, 6 credit hours are expected to be selected from the 7000 level courses offered by the Department of Food Science.

Second language reading requirement: none  
Expected time to graduation: 3.5 years

### **Food Science**

**FOOD 7090** Unit Process Operations Cr.Hrs.3  
(Formerly 078.709) A study of unit operations which are commonly utilized in the food industry with emphasis on separation processes, particle size reduction and heat transfers. Prerequisite or co-requisite: BIOE 3530 (or 034.353 or 034.329) or equivalent. Offered in 2005-2006 and alternate years.

**FOOD 7130** Food Science Seminar Cr.Hrs.3  
(Formerly 078.713) Verbal and written presentation of selected topics in Food Science. This is a required course for all M.Sc. candidates in the Food Science Department.

**FOOD 7150** Food Proteins Cr.Hrs.3  
(Formerly 078.715) An examination of the structural and functional properties of proteins in foods. Laboratory sessions will emphasize experimental approaches to study proteins in foods, including topics such as surface characterization, thermal properties, rheological behaviour, and chemical modification. Offered in 2005-2006 and



alternate years.

**FOOD 7160** Food Carbohydrates Cr.Hrs.3  
(Formerly 078.716) A study of the physico-chemical properties and functionality of food carbohydrates. Laboratory sessions will focus on quantitation, structural characterization, thermal properties and rheological behaviour of carbohydrates. Offered in 2006-2007 and alternate years.

**FOOD 7180** Food Science of Cereal Grains Cr.Hrs.3  
(Formerly 078.718) The course deals with cereal grains used for human food, the structure of constituents, and the relationship of constituent structure to functionality in the processing of the grains into food products. Emphasis will be on constituents and properties that contribute to optimum processing of wheat. Prerequisites: CHEM 2360 (or 002.236) or CHEM 2770 (or 002.277) or MBIO 2360 (or 060.236) or MBIO 2770 (or 060.277), or permission of instructor. Offered in 2006-2007 and alternate years.

**FOOD 7200** Advanced Food Microbiology Cr.Hrs.3  
(Formerly 078.720) Detection and quantitation of foodborne microorganisms and related toxins using developing methodology, including rapid microbiological assays with a comprehensive account of basic principles and advanced techniques. Prerequisites: MBIO 2100 (or 060.210), FOOD 4150 (or 078.415) or consent of instructor. Offered in 2006-2007 and alternate years.

**FOOD 7240** Topics in Food Science Cr.Hrs.3  
(Formerly 078.724) An in-depth study of selected topics of current relevance in Food Science. Available to students in the M.Sc. programs and in the Interdepartmental Ph.D. in Food and Nutritional Sciences. Prerequisite: written consent of Department Head.

**FOOD 7260** Advanced Meat Science Cr.Hrs.3  
(Formerly 078.726) Builds on fundamental aspects of muscle biochemistry and function to explain how pre- and post-harvest technology affect meat quality and safety. Issues of current concern, their resolution as well as recent advances will be discussed. Prerequisite: Consent of instructor. Offered in 2005-2006 and alternate years thereafter.

**FOOD 7270** Food Rheology Cr.Hrs.3  
(Formerly 078.727) Evaluation of the textural properties of foods provides critical information in the development of quality food products. This course deals with the principles and methodologies in food rheology and includes and examination of the rheological properties of selected food systems.

## French, Spanish and Italian

**Head:** E. Fernandez

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information: <http://umanitoba.ca/fsi>

For over 50 years the Department of French, Spanish and Italian has offered M.A. and Ph.D. programs in French. Graduates have become department heads and professors in Canadian and American universities. They have also become entrepreneurs, administrators, teachers, and translators. Their success in post-graduate endeavours is a testimony to the quality of the programs.

### Fields of Research

Research interests of faculty members include African francophone literature, Canadian francophone literature, French literature (17th -21st centuries), critical and feminist theory, French and Québécois cinema, computer assisted research and second-language acquisition.

### Research Facilities

The University of Manitoba subscribes to the ARTFL database (Project for American and French Research on the Treasury of the French Language, University of Chicago). The Faculty of Arts boasts a multi-media language laboratory, one of the most modern in the country.

### Research

The department also regularly organizes information and/or skill development sessions with the Electronic Media Department, and the Elizabeth Dafoe Library.

### M.A. in French, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Students with other degrees or backgrounds may be eligible for admission to a pre-Master's program to the satisfaction of the department. Contact Department for further information.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 4 months prior to their intended start date (normally by May 1 for a start date of September 1). International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date (normally by February 1 for a start date of September 1).

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students are required to complete 12 credit hours of coursework at the 700/ 7000 level and a



thesis. Part of the required coursework includes three credit hours of literary theory.

Second language reading requirement: No

Expected time to graduation: One to two years

### Ph.D. in French, Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, applicants to the Ph.D. program must normally hold an M.A. degree in French with a GPA of at least 3.5 in their M.A. courses.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Department at least 4 months prior to their intended start date (normally by May 1 for a start date of September 1). International students should submit their application and supporting documentation to the Department at least 7 months prior to their intended start date (normally by February 1 for a start date of September 1).

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Candidates must complete 12 credit hours of coursework at the 700/7000 level, including a compulsory component of three credit hours of literary theory.

Candidacy examinations consist of two research papers in two distinct areas related to the thesis topic, followed by an oral examination. These examinations will normally be completed in the second year of study.

Second language requirement: No

Expected time to graduation: Four Years

### French,Spanish and Italian -6000 Level

**FREN 6000** French Reading Knowledge Cr.Hrs.0 (Formerly 044.600) For graduate students in other departments which require a reading knowledge of French. This course is graded pass/fail.

**FREN 6010** Spanish Reading Test Cr.Hrs.0 (Formerly 044.601) No description available.

**FREN 6030** Italian Reading Test Cr.Hrs.0 (Formerly 044.603) No description available.

### French,Spanish and Italian -7000 Level

**FREN 7520** Topics in Literary Periods 1 Cr.Hrs.3 (Formerly 044.752) Topics in Literary Periods 1. As the course content will vary from year to year, students may take this course more than once for credit.

**FREN 7540** Topics in Literary Genres 1 Cr.Hrs.3 (Formerly 044.754) Topics in Literary Genres 1. As the course content will vary from year to year, students may take this course more than once for credit.

**FREN 7560** Topics in Critical Theory and Practice 1 Cr.Hrs.3 (Formerly 044.756) Topics in Critical Theory and Practice 1. As the course content will vary from year to year, students may take this course more than once for credit.

**FREN 7580** Special Topics 1 Cr.Hrs.3 (Formerly 044.758) Special Topics 1. As the course content will vary from year to year, students may take this course more than once for credit.

**FREN 7590** Special Topics 2 Cr.Hrs.3 (Formerly 044.759) Special Topics 2. As the course content will vary from year to year, students may take this course more than once for credit.

**FREN 7660** Études sur Diderot Cr.Hrs.3 (Formerly 044.766) Ce cours comprendra une étude d'aspects choisis de l'oeuvre et de la pensée de Diderot.

**FREN 7740** Études sur Beauvoir Cr.Hrs.3 (Formerly 044.774) Une sélection d'oeuvres de Simone de Beauvoir étudiées selon la perspective de la critique féministe contemporaine.

**FREN 7760** La Critique littéraire féministe Cr.Hrs.3 (Formerly 044.776) Une sélection de textes littéraires et théoriques analysés selon la perspective de la critique féministe contemporaine.

**FREN 7770** Tendances nouvelles du roman Cr.Hrs.3 (Formerly 044.777) Une étude de romans publiés depuis vingt ans selon la perspective de la critique contemporaine.

### Geological Sciences

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With the expertise of faculty members and technical staff and instrumental facilities capable of producing seminal research on the physical, chemical and biological



characteristics of Earth materials, the Department of Geological Sciences is contributing to the understanding of Earth history, current and past Earth processes, and environmental change. Our research is proving to have important applications in resource extraction and mineral processing and in addressing environmental issues.

Research programs have a significant component of international collaboration and a substantial partnership with industry. To support these research efforts, the department maintains well-equipped state-of-the-art analytical facilities and has ready access to other regional and national facilities outside the department.

The department offers a wide variety of research programs leading to degrees of Master of Science (M.Sc.) and Doctor of Philosophy (Ph.D.). Support for research projects is typically received from NSERC, the Geological Survey of Canada, the Province of Manitoba, the University of Manitoba, and a wide variety of industry sources such as energy resources exploration and production companies, and mining companies.

#### Fields of Research

Research areas are broadly defined as: Mineralogy and Crystallography; Environmental Mineralogy and Geochemistry; Sedimentary and Quaternary Studies; Invertebrate Paleontology; Crustal and Mantle Geophysics; Applied/Environmental Geophysics; Petrology and Tectonics; Mineral Deposits; Marine and Freshwater Systems.

#### Research Facilities

The department is equipped for a wide variety of field and lab-based research projects. For detailed information on the scope of the department's research facilities and activities, see the Geological Sciences Graduate Brochure, available as a link from <http://www.umanitoba.ca/geoscience/program/gradstudies/gradstudies.html>

The following is a summary listing of research labs. Access to these facilities is coordinated through the student's thesis advisor:

- X-Ray Diffraction Laboratories
- Spectroscopy Laboratories
- Geochemistry Laboratory
- Stable Isotope Mass Spectrometry Facilities
- Microbeam and Image Analysis Laboratory
- Sedimentological, Petroleum Geology, and Quaternary Studies Laboratories
- Invertebrate Paleontology Laboratory
- Geophysical Laboratories

#### Other Equipment and Facilities

- Star Lake Field Station, southeast Manitoba
- R.B. Ferguson Museum of Mineralogy

- Ed Leith Cretaceous Menagerie

#### M.Sc. in Geological Sciences, Admission

The normal entry requirement is the equivalent of an Honours B.Sc. degree in Geological Sciences from the University of Manitoba. Students with honours degrees in related disciplines (such as Geography, Soil Science, Biology, Chemistry, Environmental Science, Physics, Mathematics, Engineering Physics, and Geological, Civil and Electrical Engineering) may be accepted by the Graduate Admissions Committee providing their planned degree program involves studies in the geological sciences. The majority of the required courses taken by the student should normally be from the Department of Geological Sciences. The research should also be in the geological sciences.

#### Application Deadlines

The Department of Geological Sciences allows students to begin the program on September 1, January 1, or May 1. Canadian/U.S. students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than three (3) months before the intended start date. International students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than seven (7) months before the intended start date.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. GEOL 7760 plus a minimum of 12 credit hours must be selected to fulfil the course requirements of the M.Sc. thesis in Geological Sciences.

Students who have completed GEOL 7760 Graduate Seminar must give a departmental seminar annually and attend the majority of departmental seminars during the sessions in which they are either full- or part-time resident students.

The M.Sc. thesis proposal must normally be submitted within 8 months of the student's commencement in the program. It must demonstrate the student's understanding of the research area and define the research objective including demonstrating that it is a distinct contribution to the field of study. Further information on the format of the proposal and the method of evaluation is available from the Department of Geological Sciences.

Students must submit progress reports (proposals, results and timetable of thesis work) to the Head on or before February 1 annually. The progress report is generally 1 to 2 pages in length.

An oral examination is required as part of the M.Sc. thesis examination. Further information on the format is available from the Department of Geological Sciences.



Second language reading requirement: none

Expected time to graduate: two years

### Ph.D. in Geological Sciences, Admission

The normal entry requirement is the equivalent of a M.Sc. in Geological Sciences. Students with M.Sc. degrees in related fields may be accepted by the Graduate Admissions Committee providing their planned degree program involves studies in the Geological Sciences. The majority of the required courses taken by the student should normally be in the Department of Geological Sciences. The research should also be in the geological sciences.

### Application Deadlines

The Department of Geological Sciences allows students to begin the program on September 1, January 1, or May 1. Canadian/U.S. students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than three (3) months before the intended start date. International students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than seven (7) months before the intended start date.

### Program Requirements

For students admitted to the Ph.D. after a M.Sc. program, a minimum of 12 credit hours (minimum 9 at the 7000-level, maximum 3 at the 3000- or 4000-level), plus GEOL 7760 Graduate Seminar, plus a thesis is required. For students admitted directly to the Ph.D. without a M.Sc. degree, a minimum of 24 credit hours (minimum 21 at the 7000-level, maximum 3 at the 3000- or 4000- level), plus GEOL 7760 Graduate Seminar plus a thesis is required.

Students who have completed GEOL 7760 Graduate Seminar must give a departmental seminar annually and attend the majority of departmental seminars during the session in which they are either full- or part-time resident students.

Student progress reports (proposals, results and timetable of thesis work) must be submitted to the Head on or before February 1 annually. Progress reports are generally 1 to 2 pages in length.

Second language requirement: none

Expected time to graduation: four years

## Geological Sciences

**GEOL 7230** Geophysics of the Earth's Crust and Mantle Cr.Hrs.3

Processes in crust-mantle evolution and geophysical methods used to study this region of the earth. Prerequisites: (GEOL 4320 (007.432)), and (GEOL 4330 (007.433)).

**GEOL 7260** Geophysical Information Cr.Hrs.3  
The application of the Fourier approach in geophysics and information theory to geophysical interpretation. Prerequisites: (GEOL 4320 (007.432)), and (GEOL 4330 (007.433)), and (third-year standing in Mathematics).

**GEOL 7310** Quaternary Geology Cr.Hrs.3  
Seminars and lectures on sedimentary aspects of the Quaternary Epoch with emphasis on glaciation. The glacial and interglacial stratigraphic record on the continents and in the ocean basins. Three-day field trip in mid-September. Prerequisites: (GEOL 3490 (007.349)), and (GEOL 3900 (007.390)).

**GEOL 7350** Remote Sensing in the Earth and Planetary Sciences Cr.Hrs.3  
Selected topics in remote sensing with emphasis on geophysical and geologic problems. Prerequisite: B.Sc. (Honours Geology, Geophysics, or Geological Engineering), or permission of instructor for graduates of other disciplines.

**GEOL 7440** Principles of Paleoclimatic Reconstruction Cr.Hrs.3  
An interdisciplinary course which examines the sedimentological, biological, and human response to climatic change; the history of Quaternary climate and its stratigraphic expression. Prerequisite: Permission of instructor.

**GEOL 7470** Advanced Petroleum Geology and Geochemistry Cr.Hrs.3  
Lectures and seminars examining the four major components of petroleum geology: source and migration, reservoir, trap, and economics. Major emphasis on the origin and generation of petroleum and source rock geology. Field trip and core logging required.

**GEOL 7480** Advanced Seismology 1 Cr.Hrs.3  
Theory of wave propagation; source mechanisms; other selected topics. Prerequisite: GEOL 7260.

**GEOL 7490** Advanced Seismology 2 Cr.Hrs.3  
Seismic surface waves and normal modes of Earth, Earth tides and dynamic evolution. Prerequisite: GEOL 7480 or equivalent.

**GEOL 7520** Advanced X-Ray Crystallography Cr.Hrs.3  
Seminar and laboratory course covering symmetry theory, point groups and space groups, x-ray diffraction theory, the powder method, single-crystal precession photography, derivation of unit cell dimensions and space group. Prerequisite: GEOL 4280 (007.428).

**GEOL 7530** Structural Crystallography Cr.Hrs.3  
Seminar and laboratory course covering course data collection and reduction methods, crystal structure solution by Patterson and Fourier synthesis, and by direct methods, crystal structure refinement, analysis of errors, and crystal-chemical topics of interest to the participants. Prerequisite: GEOL 7520.

**GEOL 7540** Isotope Geology and Geochronology Cr.Hrs.3  
The principles and methods of isotopic age determination



and the measurement of geological rate processes using certain radioactive nuclides and the variations of the isotopic compositions of their daughter products. The evolution of the earth's mantle, continental and oceanic crust. The application of light, stable isotope fractionation to understanding geological processes.

**GEOL 7550** Hydrothermal Petrochemistry Cr.Hrs.3  
The chemistry, mineralogy, and petrology of mineral deposits and alteration zones of the hydrothermal type, and their association with igneous and tectonic events. Theory and experimental data on metasomatic processes.

**GEOL 7570** Advanced Mineralogy 1 Cr.Hrs.3  
Detailed seminar study of important rock-forming and ore minerals based on current research publications, covering crystal structure and chemistry, origin and paragenesis. Lab introduction to principal chemical and physical methods of analyzing minerals.

**GEOL 7580** Advanced Mineralogy 2 Cr.Hrs.3  
Detailed seminar study of selected minerals related to students' interests based on current research publications, covering crystal structure and chemistry, origin and paragenesis. Lab assignments to examine diverse properties of the discussed species.

**GEOL 7590** Advanced Paleontology 1 Cr.Hrs.3  
Topics in paleobiology of the invertebrates, and principles of paleontology. Upon request, course may be adapted to individual requirements of students in other disciplines (for example, specific groups of invertebrates, paleoecology, trace fossils, etc.). Prerequisites: (GEOL 3310 (007.331)), and (GEOL 4310 (007.431)), or permission of instructor.

**GEOL 7600** Advanced Paleontology 2 Cr.Hrs.3  
Topics in paleobiology of the invertebrates, and principles of paleontology. Upon request, course may be adapted to individual requirements of students in other disciplines (for example, specific groups of invertebrates, paleoecology, trace fossils, etc.). Prerequisite: GEOL 3310 (007.331), or GEOL 4310 (007.431), or permission of instructor.

**GEOL 7610** Advanced Igneous Petrology Cr.Hrs.3  
The origin of magmas, and their association with tectonic regimes, and earth structure. Crystallization and differentiation of magmas, and the distribution of elements and isotopes.

**GEOL 7620** Advanced Metamorphic Petrology Cr.Hrs.3  
Natural mineral assemblages and their association with igneous and tectonic events. Theory of variable physchem regimes, heterogeneous equilibrium, and reaction processes.

**GEOL 7630** Ductile Strain in Geologic Minerals Cr.Hrs.3  
The theory, mechanics and interpretation of naturally occurring ductile strain in consolidated and semi-consolidated rocks. Applications of analysis to engineering geology and structural geology.

**GEOL 7640** Folding of Rocks Cr.Hrs.3  
Ideal fold theory and mechanisms; experimental folding; fold geometry and styles; fold families; interference folding; interpretation of areas that have undergone folding.

**GEOL 7650** Fracturing of Rocks Cr.Hrs.3  
Experiments on, theory and properties of, fractures ranging in scale from micro-rocks to large scale fault zones; mechanisms of fracturing; interpretation of stress conditions leading to fracturing.

**GEOL 7680** Physical Volcanology Cr.Hrs.3  
Forms and environments of lava extrusion and flow; mechanics of pyroclastic eruptions and transport; nature of pyroclastic deposits; magma chambers; volcano development and destruction.

**GEOL 7690** Precambrian Geology Cr.Hrs.3  
Examination of the major lithologic components of the Precambrian Shields of Canada, Australia, and South Africa. Emphasis will be on the origin of these components, discussion of early crustal development, and similarities and differences of Precambrian and younger processes.

**GEOL 7700** Advanced Clastic Sedimentology Cr.Hrs.3  
Lectures and seminars on clastic depositional environments. Critical evaluation of accepted facies models followed in each case by examination of the ancient record. One week field trip and core logging required. Prerequisite: GEOL 3900 (007.390), or permission of instructor.

**GEOL 7720** Geophysical Imaging and Data Processing Cr.Hrs.3  
Advanced frequency filter design; deconvolution methods for seismogram; velocity and wavefield stacking; various digital methods for potential field data; principles of tomography and geophysical imaging techniques. Prerequisites: (GEOL 3740 (007.374)), and GEOL 7260, or permission of instructor.

**GEOL 7740** Workshop in the Geological Sciences 1 Cr.Hrs.3  
Critical, in-depth group study of problems and new concepts in the geological sciences; discussion of current research by staff and visiting scientists; students will pursue individual research interests and will work with staff on specific topics.

**GEOL 7750** Workshop in the Geological Sciences 2 Cr.Hrs.3  
Critical, in-depth group study of problems and new concepts in the geological sciences; discussion of current research by staff and visiting scientists; students will pursue individual research interests and will work with staff on specific topics.

**GEOL 7760** Seminar in Geological Sciences Cr.Hrs.3  
A discussion of topics of current interest from the whole spectrum of geological sciences to inform students on research work outside their specialty. Required of all graduate students. For ancillary credit only. Geological Sciences Colloquium. Weekly discussion of topics of current interest. Presentation of recent research from geological literature, the department, and visitors. Required of all graduate students who have received credit for GEOL 7760.

**GEOL 7770** Distribution of Ores: Metallogeny Cr.Hrs.3  
Distribution of geological metal accumulations in space and time. Brief introduction to existing organizational frameworks, followed by a systematic review of metalliferous environments and associations. Prerequisite: GEOL 4300 (007.430), or permission of instructor.



**GEOL 7780** Advanced Carbonate Sedimentology Cr.Hrs.3  
Lectures and seminars on selected topics of carbonate sedimentology, including depositional environments, lithofacies sequences and diagenesis. Prerequisite: GEOL 3900 (007.390), or permission of instructor.

**GEOL 7790** Advanced Instrumental Techniques in Geology Cr.Hrs.3  
Lectures and laboratory course covering the application of microbeam, mass spectrometer, diffraction and wet geochemical analytical techniques in mineralogy and geochemistry. Includes coverage of ICP, PIXE, powder and single crystal diffraction and electron microprobe analysis.

**GEOL 7800** Evaporite Sedimentology Cr.Hrs.3  
Lectures and seminars on evaporite sedimentology, including depositional environments, diagenesis and stratigraphy of evaporitic sequences. One week field trip immediately before or during fall term required.

**GEOL 7810** Electromagnetic Methods in Geophysics Cr.Hrs.3  
Examination of the theory and application of electromagnetic methods in geophysics. Topics include: electrical properties of earth materials, review of EM methods, EM theory for layered media, EM responses of simple structures and case studies.

**GEOL 7820** Environmental Geophysics Cr.Hrs.3  
Examination of the application of geophysics to environmental targets. Topics will vary according to student interest and may include aspects of new-surface geophysics, engineering geophysics, geophysics of global climate change and geophysical risk assessment.

## German and Slavic Studies

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**Academic Staff:** Please refer to the website for Faculty information: [umanitoba.ca/arts/departments/german\\_and\\_slavic](http://umanitoba.ca/arts/departments/german_and_slavic)

The department offers programs of study leading to the Master of Arts degree in the fields of German Language and Literature and Slavic Languages and Literatures. Programs must be arranged in consultation with the Graduate Chair of the department.

### Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulation Section of this Calendar. Students with other degrees or backgrounds may be eligible for admission to a pre-Master's

program to the satisfaction of the department. Please contact the department for further information.

### Pre-Master's Year

Students without a four-year degree or without an undergraduate major in the discipline to be studied must complete a pre-Master's year as approved by the chair of the appropriate graduate studies committee or his/her delegate before they can enter the Master's program. This year is intended to bring the student's standing to approximately the level of a four-year degree with a major in the appropriate discipline. It will normally consist of 24 credit hours of coursework, of which at least 12 are in the major discipline. At most, one grade of "C+" in a course of six credit hours, or two grades of "C+" in courses of three credit hours, will be permitted.

### Master of Arts

Students fulfil the requirements for the Master's degree by doing a combination of coursework and thesis. A minimum of 15 credit hours of course-work is required, including GRMN 7200 / SLAV 7200, GRMN 7210 / SLAV 7210, and 3 other credit hours at the 7000 level in the student's major discipline. The remaining 6 credit hours, designated as ancillary credit, may be taken at the 7000, 4000, 3000 (or in exceptional circumstances the 2000) level and may be in courses in the student's major discipline, or in another program or department, at the discretion of the chair of the Graduate Studies Committee. A thesis prospectus must be submitted to the candidate's M.A. advisor a minimum of two months before the thesis is submitted to the M.A. Committee.

Students for the M.A. in German who received credit for the course GRMN 4200 have already fulfilled the requirement for GRMN 7200; they replace GRMN 7200 with 3 other credit hours on the 7000 level. Students for the M.A. in German who received credit for the course GRMN 4210 have already fulfilled the requirement for GRMN 7210; they replace GRMN 7210 with 3 other credit hours on the 7000 level.

Expected time to graduation: Two Years; all requirements for the Degree of M.A. must be fulfilled within five years of the original date of entry into the program. Time extensions for completion of the program may be permitted on an individual basis.

### Application Deadlines

The Department of German and Slavic Studies allows students to begin their program on either 1 September or 1 January. For admission for each of these start dates, Canadian/U.S. students should send their applications with complete supporting documentation to Faculty of Graduate Studies no less than four (4) months prior to their intended start date. International students should send their applications with complete supporting documentation to arrive no later than seven (7) months prior to their intended start date.



## German and Slavic Studies -6000 Level

**GRMN 6000** Reading Language Test Cr.Hrs.0  
(Formerly 008.600)

## German and Slavic Studies -7000 Level

**GRMN 7200** Literary and Cultural Theory Cr.Hrs.3  
A survey of the major theoretical approaches to German and Slavic literature and cultures. Discusses the aesthetics of Enlightenment and Idealism, Nietzsche, Freud, Russian Formalism, Prague Structuralism, hermeneutics, semiotics, dialogism (Bakhtin), the Frankfurt School, collective memory, gender studies, post-colonialism, and multi-culturalism.

**GRMN 7210** Introduction to Second Language Acquisition and Methods of Language Teaching Cr.Hrs.3  
This course provides a general introduction to theories and approaches in second language acquisition (SLA) and methods of language teaching specifically designed for MA students of German and Slavic languages.

**GRMN 7240** Colloquium in German Studies 1 Cr.Hrs.3  
A detailed study of theoretical and methodological questions in German literature and culture. Course contents will vary from year to year depending on the needs and interests of students and staff.

**GRMN 7242** Colloquium in German Studies 2 Cr.Hrs.3  
A detailed study of German stylistics, German as a Second Language, or the structure of the German language. Course contents will vary from year to year depending on the needs and interests of students and staff.

**GRMN 7300** Special Topics in German Literature and Culture 1750-1945 1 Cr.Hrs.3  
Topics dealing with German literature and culture focusing on an author, a systematic topic or period between 1750 and 1945. Contents will vary from year to year depending on the needs of students and staff. As the course content will vary from year to year, students may take this course more than once for credit.

**GRMN 7330** Seminar in Contemporary German Literature and Culture Cr.Hrs.3  
Topics dealing with German literature and culture in the second half of the 20th and in the 21st century. Contents will vary from year to year depending on the needs of students and staff.

**GRMN 7340** Seminar in German Film and Media Studies Cr.Hrs.3  
Studies a variety of German media theories and sources, including newspaper, television and film in the 20th and in the 21st centuries.

**GRMN 7350** Seminar in German and European Literature and Culture Cr.Hrs.3  
Topics dealing with German literature and culture within a European comparative context. Contents will vary from year to year depending on the needs of students and staff.

**GRMN 7360** Independent Studies in German Cr.Hrs.3  
Each student will work with an instructor to prepare a

reading program in an appropriate area, depending on the needs of students and staff. The student will present written assignments as required. As the course content will vary from year to year, students may take this course more than once for credit.

## German and Slavic Studies -Slavic Studies

**SLAV 7200** Literary and Cultural Theory Cr.Hrs.3  
A survey of major theoretical approaches to German and Slavic literatures and cultures. Discusses the aesthetics of Enlightenment and Idealism, Nietzsche, Freud, Russian Formalism, Prague Structuralism, hermeneutics, semiotics, dialogism (Bakhtin), the Frankfurt School, collective memory, gender studies, post-colonialism, and multi-culturalism.

**SLAV 7210** Introduction to Second Language Acquisition and Methods of Language Teaching Cr.Hrs.3  
This course provides a general introduction to theories and approaches in second language acquisition (SLA) and methods of language teaching specifically designed for MA students of German and Slavic languages.

**SLAV 7400** Selected Topics in Slavic Literatures Cr.Hrs.3  
Seminar discussions of various problems in Slavic literatures as related to the students' field of research. As the course content will vary from year to year, students may take this course more than once for credit.

**SLAV 7410** Seminar in Contemporary Slavic Literatures Cr.Hrs.3  
Selected problems in contemporary Slavic literatures as related to the students' field of research.

**SLAV 7420** Studies in Modernism Cr.Hrs.3  
A study of the representative works of modernism in Slavic countries with a focus on the years 1890-1930. The styles and movements that characterized the period will be examined. References will be made to the art of the period.

**SLAV 7430** Special Topics in Slavic Studies Cr.Hrs.3  
An independent study course in Slavic literatures, cultures, or folklore. Topics will be selected to meet students' research or study interests. As the course content will vary from year to year, students may take this course more than once for credit.

## History

**Head:** M. Gabbert

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**Academic Staff:** Please refer to the website for Faculty information: [umanitoba.ca/faculties/arts/departments/history](http://umanitoba.ca/faculties/arts/departments/history)

The department offers programs leading to both the Master of Arts and Doctor of Philosophy Degrees. The MA program (referred to as the Joint Master's Program or JMP) is a joint



degree program offered by the History departments of the University of Manitoba and the University of Winnipeg. Students have available the educational and financial resources of both institutions.

### Fields of Research

Research interests of faculty are reflected in the fields offered for graduate study in the department. These include: The Americas, Britain including the Commonwealth and Empire, Canada, Medieval Europe, Modern Europe, Asia, Africa, as well as in Social History, Modern World, History of Science and Archival Studies.

### Research Facilities

There are excellent archival and library facilities in Winnipeg. The most important research libraries are located at The University of Manitoba and the Manitoba Legislative Library, both of which are official repositories for Canadian publications and which support original research in most areas of Canadian history. The Hudson Bay Company Archives is a world-renowned institution for the study of imperialism, first nations and western and northern North America. Other major archival facilities include: The Provincial Archives of Manitoba, The University of Manitoba Archives and Special Collections, The Manitoba Office of the National Archives, United Church Archives, Western Canada Pictorial Index, the Centre du Patrimoine and the City of Winnipeg Archives.

### M.A. in History , Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

### Application Deadlines

The application deadline is January 15. Please refer to the History Department website for application requirements.

### Program Requirements

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students may choose among three versions of the program: first, a course-based M.A.; second, a thesis-based M.A.; and third, an M.A. in Archival Studies. The course-based M.A. requires four courses, three of which should be 7000-level History courses. In addition, the student is required to select a major field, and must pass both a written and oral comprehensive examination in that field. The thesis-based M.A. requires two 7000-level courses and the presentation of a thesis. The Archival Studies M.A. requires three graduate courses, an Internship and a thesis.

Second Language Reading Requirement: All graduate students in History are required to demonstrate a reading

knowledge of a second language. Candidates who specialize in Canadian History must display a reading knowledge of French and English. Texts for translations are chosen by the History department. Examinations are conducted by faculty in the language departments at the University of Manitoba.

Expected Time to Graduate: All requirements for the degree of M.A. in History must be fulfilled within five years of the original date of entry to the Program.

### Ph.D. in History, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

### Application Deadlines

The application deadline is January 15. Please refer to the History Department website for application requirements.

### Program Requirements

The minimum course requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Doctoral candidates are required to complete at least three 7000-level courses, take candidacy exams in three fields of historical inquiry, and present an original dissertation which makes a distinct contribution to historical knowledge, based on primary sources.

Second Language Requirement: All graduate students in History are required to demonstrate a reading knowledge of a second language. Candidates who specialize in Canadian History must display a reading knowledge of French and English. Texts for translations are chosen by the History department. Examinations are conducted by faculty in the language departments at the University of Manitoba.

Expected time to graduation: All requirements for the degree of Ph.D. in History must be completed within seven years of the original date of entry to the program.

### History

**HIST 7190** Studies in American History since 1877 Cr.Hrs.6 (Formerly 011.719) An examination of selected topics in American history from Reconstruction to the present. Particular topics will be announced each year. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 7220** Selected Topics in British History Cr.Hrs.6 A detailed examination of selected topics and problems in British history. Topics and content will vary from year to year. As the course content will vary from year to year, students



may take this course more than once for credit.

**HIST 7230** Nineteenth-Century Britain Cr.Hrs.6  
(Formerly 011.723) A study of British culture, politics, and diplomacy, 1830-1900.

**HIST 7240** State and Society in Latin American History Cr.Hrs.6  
Readings focused on state/society relations in the history of Latin America since colonial times. After considering different theoretical approaches, the course will analyze recent works that cover different historical periods, countries, issues, and social factors.

**HIST 7270** Special Studies in Social History Cr.Hrs.6  
(Formerly 011.727) A seminar course, the content of which will vary from year to year. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 7290** Reading Seminar in Canadian History, 1860 to the Present Cr.Hrs.6  
(Formerly 011.729) While the specific content may vary from year to year, the general approach shall be to ensure a broad sampling of the secondary literature in Canadian history. Political, social and economic themes will be emphasized and particular concern shall be taken with historiographical controversy. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 7330** History of Western Canada Cr.Hrs.6  
(Formerly 011.733) A research course in western Canadian history. The range of subjects will vary from year to year depending on the interests of the students. The subjects range from the fur trade to modern political, social, and economic issues.

**HIST 7370** History of Recorded Communication Cr.Hrs.6  
(Formerly 011.737) An examination of aspects of the history of recorded communication from antiquity to the present. The aim of the course is better understanding of the nature of archival records. Emphasis is placed on Canadian examples from the 19th and 20th centuries.

**HIST 7380** Selected Problems in Archival Studies Cr.Hrs.6  
(Formerly 011.738) An examination of selected problems in archival theory and administration. The aim of the course is better understanding of the administration of records in archival institutes. Archival theory and administration are studied in relation to the history of recorded communication and records keeping. Emphasis is placed on Canadian examples from the 19th and 20th centuries.

**HIST 7390** Internship in Archival Studies Cr.Hrs.3  
(Formerly 011.739) The internship provides an introductory work experience in a Canadian archives to students who have successfully completed the first year of archival studies. The internship will be no less than three months in duration. It is done in the summer after the first year of study.

**HIST 7470** The Later Middle Ages Cr.Hrs.6  
(Formerly 011.747) Selected topics in economics, social, cultural, art and religious history of the later medieval world. Students may not hold credit for both HIST 7470 (or 011.747) and the former 011.743 .

**HIST 7500** Jewish and European History and Historiography Cr.Hrs.6

This seminar examines issues relating to Jewish history and historiography in the context of European history and historiography.

**HIST 7510** Early Modern European History Cr.Hrs.6  
(Formerly 011.751) A seminar which studies early modern Europe from the perspective of new approaches to historiography.

**HIST 7520** The Age of Enlightenment Cr.Hrs.6  
(Formerly 011.752) Emphasis on 18th century French intellectual history and its relationship to the origins and course of the French Revolution. Some reading knowledge of French is almost essential.

**HIST 7560** The Russian Revolution Cr.Hrs.6  
(Formerly 011.756) The events constituting the Revolution proper (1917-21) will be studied in relation to their historical background and in the light of their subsequent impact both nationally and globally.

**HIST 7600** Northern Historical Studies Cr.Hrs.6  
(Formerly 011.760) This course is based upon a number of studies of various aspects of the North. Particular emphasis is given to the North in relation to the fur trade, exploration, and Canadian development.

**HIST 7630** History of Health and Disease Cr.Hrs.6  
An introduction to principal issues and approaches in the history of health and disease. It is not meant to be a strictly chronological survey. Topics and themes may include the development of nursing and medical professions; the transformation of the hospital; mental health; alternative therapies; colonization, infectious disease and aboriginal health; and health and the state.

**HIST 7640** Social History of Health and Disease in Modern Canada Cr.Hrs.6  
This course explores the history of health and health care in Canada, with a focus on the late 19th and 20th century. Topics will include colonization, infectious disease, and Aboriginal health; the evolution of medical and nursing professions and the modern hospital; mental health; cancer; alternative therapies; childbirth; and old age. Analytical categories of gender, race, ethnicity, class, and sexuality will run throughout the material.

**HIST 7670** Studies in Canadian History, 1870-1919 Cr.Hrs.6  
(Formerly 011.767) This seminar will focus on social, intellectual, political, and economic themes, with particular emphasis on the western experience. Specific topics will vary from year to year depending upon the interests of students and instructors. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 7700** Historical Method Cr.Hrs.6  
(Formerly 011.770) A seminar and workshop in historical method. The topics covered will encompass conventional research, analysis and writing, as well as the application of social science techniques to the analysis of historical problems, the fundamentals of data processing, and computer applications.



**HIST 7710** History and Cultural Studies Cr.Hrs.6  
(Formerly 011.771) A working guide to interdisciplinary approaches of the new field of Cultural Studies, examining its principal theoretical bases and existing and potential applications for the historian.

**HIST 7730** Modern Latin America Cr.Hrs.6  
(Formerly 011.773) An examination of selected themes such as economic and social change, political modernization, and external influences and intervention in Latin America during the 19th and 20th centuries.

**HIST 7740** England in the Long Eighteenth Century Cr.Hrs.6  
(Formerly 011.774) Selected themes in the history of England's long eighteenth century from 1660-1840. Specific topics will vary from year to year but will generally include the transformation of political culture, the consequences of war, the question of national identities, the emergence of commercial society and the changes to social structure.

**HIST 7750** Gender History in Canada Cr.Hrs.6  
(Formerly 011.775) Explores the roles, images and experiences of masculinity and femininity in the past. Will familiarize students with the changing theoretical and historiographical terrain of gender history. It will draw on the international literature but focus on the history of gender in Canada, examining how historians analyse masculinity, femininity, the family, sexuality, politics, race/ethnicity, moral regulation, class, nation, and colonialism.

**HIST 7760** History of Aboriginal Rights Cr.Hrs.6  
(Formerly 011.776) A study of Aboriginal rights from early contact to the present with a particular emphasis on treaties, the courts, and Aboriginal efforts to enforce specific forms of rights.

**HIST 7770** Selected Topics Cr.Hrs.6  
(Formerly 011.777) A program of independent reading and/or research on selected topics, undertaken and arranged by a student in consultation with his prospective instructor, upon the approval of the Graduate Chair. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 7772** Selected Topics Cr.Hrs.3  
The content of this course varies. Courses offered under this number will be advanced graduate seminars investigating topics that are not part of an existing seminar course. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 7774** Independent Study/Reading Cr.Hrs.3  
The content of this course will vary. It will be an advanced, independent reading/study course for graduate students, on a topic of particular interest to the student. Normally the topic will be one that the student cannot study in an existing seminar course. As the course content will vary from year to year, students may take this course more than once for credit.

**HIST 7820** Issues in Modern Asian History: Selected Topics Cr.Hrs.3  
(Formerly 011.782) Content will vary. Emphasis will be on the analyses of important issues and recent developments in the history and historiography of modern Asia. Consult the History Department for particulars. As the course content will

vary from year to year, students may take this course more than once for credit.

**HIST 7910** Studies in Modern World History Cr.Hrs.6  
(Formerly 011.791) A seminar emphasizing the period since 1945. With the agreement of the instructor and depending on the needs of their degree programs, students may select a reading or research option.

**HIST 7920** Popular Radicalism in the Modern World Cr.Hrs.6  
(Formerly 011.792) Selected topics in the history of popular movements of social and political protest in the modern world. The course considers problems such as the conditions and motivations that give rise to social movements, the development of radical theory and political practice, and the culture of dissent. Students may not hold credit for both HIST 7920 (or 011.792) and the former 011.726 .

**HIST 7930** Imperialism, Decolonization and Neo-Colonialism 1700-Present Cr.Hrs.6  
An exploration of theoretically informed literature that has attempted to engage with and understand Imperialism and Colonialism, Anti-colonial nationalism, National liberation movements and Neo-Colonialism. Prerequisite: permission of instructor.

## Human Anatomy and Cell Science

**Head:** T. Klonisch

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**Website:** <http://umanitoba.ca/medicine/anatomy>

**Academic Staff:** Please refer to the website for Faculty information: <http://umanitoba.ca/medicine/anatomy>

The Department of Human Anatomy and Cell Science offers graduate training at both the M.Sc. and Ph.D. levels. The purpose is to prepare students for careers in biomedical research, for teaching in selective areas of anatomy and admission to clinical programs. It is the only department to offer basic and advanced courses in gross, microscopic and developmental anatomy. It also offers courses in neuroscience, cell biology, electron microscopy and cardiac lipids. These have now become particularly important tools in assessing outcomes associated with use of transgenic and gene knockout animals as models of human disease. Graduate students are also provided with opportunities to teach in various sub-disciplines of anatomy. In addition to transmitting knowledge, they must also generate new knowledge by undertaking meaningful research. The department also provides a fine milieu for cross-fertilization of ideas, and more personalized attention; benefits of a smaller department. The department offers a multidisciplinary program in biomedical applications of imaging and spectroscopy in conjunction with Institute for Biodiagnostics – National Research Council. Various members of the department are affiliated with the Faculty of Dentistry, School of Medical Rehabilitation, and St. Boniface



General Hospital Research Centre. The department also provides continuing medical education to the allied health science community.

### Fields of Research

The Department consists of a number of faculty, each of which are experts in one or more sub-disciplines of anatomy. Quality teaching programs are enriched by scholarly pursuits of department members who are engaged in research of the highest quality in the following areas: muscle repair, developmental anatomy and biology, cardiology, neuroendocrinology, cell and molecular biology and neuroscience. Graduate students are provided with the opportunity to use a variety of contemporary techniques such as autoradiography, light and electron microscopy, morphometrics, tissue culture and transplantation, high performance liquid chromatography, immunocytochemistry, in situ hybridization, radioimmunoassay, electrophoresis, transgenics, molecular biology, magnetic resonance imaging and spectroscopy.

### Research Facilities

The department is spacious, has excellent facilities and is well equipped for research. The department houses an electron microscopy suite equipped with scanning and electron microscopes, a communal tissue culture, histology, and autoradiography facility, and a satellite animal facility. Individual research laboratories are equipped with microscopes (fluorescence, transmitted light, dissecting), photomicrography apparatus, high performance liquid chromatography, and radioimmunoassay capabilities, polymerase chain reaction (PCR), DNA sequencing, genomic cloning and other molecular biology facilities. Personnel also have access to magnetic resonance imaging and MR spectroscopy facilities.

### M.Sc. in Human Anatomy and Cell Science, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. The following categories of students may be accepted for graduate study in this department:

- 4-year undergraduate Science degree with a minimum GPA of 3.0.
- Students who have completed a 3-year general undergraduate degree may be admitted following completion of the required pre-Master's courses. Contact the Department for details.
- Graduates in medicine or dentistry holding M.D., D.M.D. (D.D.S.), or equivalent degrees.
- Other suitable graduates will be considered.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies

at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students are required to take Methodology of Research (ANAT 7090) and one of Cell Biology (IMED 7090), Human Microscopic (Histology) Anatomy (ANAT 7360); Human Macroscopic (Gross) Anatomy (ANAT 7370); Neuroscience 1 (ANAT 7270) or Human Developmental (Embryology) Anatomy (ANAT 7380) plus an appropriate course in statistics (Biostatistics 1, CHSC 7470) or equivalent. Students must then complete a thesis.

For supplementary regulations and other information please contact the Department of Human Anatomy and Cell Science.

Second language reading requirement: none

Expected time to graduate: three years

### Ph.D. in Human Anatomy and Cell Science, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Department at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Department at least 7 months prior to their intended start date.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students are required to take Readings in Anatomy (ANAT 7330) and one of Cell Biology (IMED 7090), Human Microscopic (Histology) Anatomy (ANAT 7360); Human Macroscopic (Gross) Anatomy (ANAT 7370); Neuroscience 1 (ANAT 7270) or Human Developmental (Embryology) Anatomy (ANAT 7380) not already completed at the Master's level. Before receiving the Ph.D. degree, students must have taken an appropriate statistics course (Biostatistics 1 CHSC 7470 or equivalent) if not already completed.



For supplementary regulations and other information please contact the Department of Human Anatomy and Cell Science.

Second language requirement: none

Expected time to graduation: five years

## Human Anatomy and Cell Science

**ANAT 7060** Advanced Human Macroscopic (Gross) Anatomy Cr.Hrs.6  
(Formerly 080.706) Dissection, with special emphasis on regions relative to the research projects and interests of students concerned. Both terms. Prerequisite: ANAT 7370 or equivalent; consent of instructor.

**ANAT 7090** Methodology of Research Cr.Hrs.3  
(Formerly 080.709) Theoretical and practical instruction in scientific investigation, research design, data analysis and presentation, and writing research proposals.

**ANAT 7250** Experimental Teratology Cr.Hrs.3  
(Formerly 080.725) Basic principles of experimental teratology in lectures, seminars, and practical work. The causes, embryological basis, and mechanisms of developmental defects will be covered.

**ANAT 7262** Human Neuroscience Cr.Hrs.3  
A comprehensive neuroanatomical study of the human brain and spinal cord. The structure and function of the nervous system will be covered through lectures complemented by laboratory sessions with dissection of the brain and examination of models.

**ANAT 7280** Neuroscience II Cr.Hrs.6  
(Formerly 080.728) Application of basic neurological sciences to the -general practice of medicine. Lectures, seminars, clinics. Prerequisite: ANAT 7270 (or 080.727).

**ANAT 7320** Introduction to Scanning and Transmission Electron Microscopy Cr.Hrs.3  
(Formerly 080.732) Designed to provide general theoretical aspects of electron microscopy and practical knowledge of electron microscopic laboratory procedures. 3 hours lecture/lab per week, one term. Minimum enrollment: 5 students. Prerequisite: written consent of instructors.

**ANAT 7330** Readings in Anatomy Cr.Hrs.3  
(Formerly 080.733) Regular tutorials on selected topics in Anatomy and research related to student's research work. The tutorials will be incorporated into the Department's seminar program.

**ANAT 7350** Cardiac Lipids and Membrane Function Cr.Hrs.3  
(Formerly 080.735) Provides detailed account of the role of cardiac bioactive lipids on membrane properties and functions. Two hour tutorials per week, one term. Prerequisite: written consent of instructor.

**ANAT 7360** Human Microscopic Anatomy (Histology) Cr.Hrs.6

(Formerly 080.736) Microscopic structure correlated to function, of tissues and organs of the human body. Lecture and laboratory course.

**ANAT 7380** Human Developmental Anatomy (Embryology) Cr.Hrs.3  
(Formerly 080.738) Human development as it is of practical application to medical subjects.

**ANAT 7390** Structural Organization in Human Anatomy Cr.Hrs.3  
(Formerly 080.739) A course for students participating in physics, chemistry, computer science, engineering, architecture, and mathematics (non-biological areas). A conceptual approach to Human Anatomy, for direct application to information obtained with current and developing techniques for detection, diagnosis, treatment and management of human lifestyle and disease. Prerequisite: consent of instructor(s). Minimum enrollment: 3

**ANAT 7392** Human Neuroanatomy Cr.Hrs.3  
(Laboratory required). The objective of this course is to provide an introduction to the structure and function of the nervous system from an anatomical perspective. It is intended primarily for graduate students registered in the Department of Human Anatomy and Cell Science. The course consists of a combination of lectures and laboratory sessions. The lectures will provide an introduction to the basic structure and function of the nervous system. Disorders of the nervous system will be discussed to highlight the function of different components of the nervous system. Laboratory sessions will be scheduled at regular intervals to provide students the opportunity to examine the three-dimensional structure of the nervous system.

**ANAT 7400** Morphological Techniques Cr.Hrs.3  
(Formerly 080.740) Designed to develop advanced morphological techniques such as immunohistochemistry, in situ hybridization, immunogold, in situ PCR, cell culture, autoradiography, antero- and retro-grade tracing techniques.

**ANAT 7470** GRADUATE GROSS ANATOMY Cr.Hrs.6  
A comprehensive Human Gross Anatomy study of the structures of the whole human body. The structure and function of the body systems will be covered through lectures (such as anatomical, clinical, radiological, cross sectional) and complemented by laboratory sessions with cadaver dissection of whole cadavers, including review and reading sessions.

## Human Nutritional Sciences

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**Academic Staff:** Please refer to the website for Faculty information: [umanitoba.ca/faculties/human\\_ecology/program](http://umanitoba.ca/faculties/human_ecology/program)



[s/hns/88.htm](https://www.hns.umanitoba.ca/s/hns/88.htm)

The Department of Human Nutritional Sciences is one of the largest in Canada and the University of Manitoba is the only university in the province to offer graduate programs leading to the M.Sc. and Ph.D. degrees in the area of nutrition and food sciences. Graduate programs in Human Nutritional Sciences integrate concepts in metabolism, food and community nutrition. Research in experimental nutrition explores the role of nutrients and food components in basic biological processes from the whole organism to the molecular level. Community and clinical nutrition research focuses on policy development, food choice behaviour and novel approaches to disease management. Research related to foods includes investigations of the quality and stability of ingredients, development of functional and nutraceutical components from grains, oilseeds and legumes, and consumer preference and sensory characteristics of foods.

A multidisciplinary approach to research is common, with linkages to university departments such as medicine, agricultural and food sciences, management, dentistry, nursing and physical education and recreation studies, as well as with the Richardson Centre for Functional Foods and Nutraceuticals and the Canadian Centre for Agri-food Research in Health and Medicine. Collaborations outside the University also exist with organizations such as the Canadian International Grains Institute, the Grain Research Laboratory, Agriculture and Agri-Food Canada, Manitoba Health, the Winnipeg Regional Health Authority and the Manitoba Institute of Child Health.

Courses offered in nutrition and metabolism address topics in phytochemicals, proteins, energy and carbohydrates, lipids, vitamins, minerals and trace elements. Community nutrition courses include topics in qualitative research, epidemiology, public policy, nutrition education and theoretical approaches to dietary change interventions. Topics related to food research include nutraceuticals, functional foods, lipids, flavour chemistry and sensory properties of foods.

An informal atmosphere exists with free interaction between faculty and graduate students. The department attracts local, national and international students, many of them holders of prestigious scholarships. Graduate student training in the Department of Human Nutritional Sciences has led to careers as: research scientists in academic, public and private sectors, technical specialists and research supervisors in food and pharmaceutical industries, food and nutrition policy analysts, food service managers, health and wellness specialists and educators, nutrition consultants, university and government employees, food quality assessment and research supervisors in government and agricultural laboratories.

Graduates of the M.Sc. program are qualified to meet the demands of the public, industry and government for food and nutrition specialists skilled in planning, administering and evaluating programs. The program also includes training in biochemical and analytical methods.

Training at the doctoral level is offered as a PhD in Human Nutritional Sciences or as a Ph.D. in Applied Health Sciences. It is designed for individuals who design and execute major research projects, train other researchers, serve as senior advisors consultants in health, social or economic policy and planning, and teach in nutrition or foods areas.

#### Fields of Research

Specific areas of research interests include the following: role of diet in health and disease, community nutrition, including nutritional assessment, the study of consumer perceptions and food choices, and evaluation of nutrition education and programs; identification and development of functional foods and nutraceuticals, and evaluation of their health benefits; effect of nutrients on body defence and immune systems including those involved in cell damage and repair and detoxification of environmental pollutants; nutritional biochemistry and nutrient-gene interactions; functional and health aspects of nutrients and foods in pediatric and geriatric populations; application of the knowledge of functional foods and nutraceuticals in the design of food products for the general population and specific groups of individuals; effects of modification and processing of oilseeds and oils on quality, stability and performance of foods; relationship of sensory and chemical flavour properties of foods; food security and policy development, cultural and social aspects of food choice behaviours.

#### Research Facilities

Human Nutritional Sciences houses laboratories for basic as well as applied research. Laboratories such as the Canada Foundation for Innovation Nutritional Sciences Research Facility and the Richardson Centre for Functional Foods and Nutraceuticals are equipped with the tools to carry out research at the level of the whole human, animal, cell, and molecule. Facilities for diet preparation for human and animal dietary intervention studies are available as well as modern analytical instrumentation and cell culture facilities. The George Weston Ltd. Sensory and Food Research Laboratory, with controlled ventilation and lighting and a computerized sensory analysis system, provides a controlled setting for testing of food products. This facility is used to evaluate the effects of food ingredients and nutraceuticals, storage conditions and preservation on food quality and consumer acceptance as well as on the commercial viability of a food or food products.

#### M.Sc. in Human Nutritional Sciences, Admission

To be admitted to the M.Sc. program, a candidate must have a GPA of at least 3.0/4.5. A 4-year undergraduate degree from the Department OR another undergraduate degree with three credits of Physiology, three credits of Biochemistry and six credits in upper level foods or nutrition courses are required for unconditional admittance.



Students with a 3-year undergraduate degree enter at the Pre-Master's level, in which at least 18 credit hours of course work are required. Pre-Master's students are not eligible for graduate student stipends and do not carry out a research project.

Students applying to a Ph.D. program should hold a thesis-based Master's degree in nutrition or a related field. Alternatively, evidence of an extensive publication and research background also may be considered.

### Application Deadlines

Canadian and U.S. students should send their application and all supporting documentation to the Faculty of Graduate Studies, **at least three months** prior to their intended start date. International students should send their application and all supporting documentation to the Faculty of Graduate Studies, **at least six months** prior to their intended start date.

### Program Requirements

As part of the minimum 12 credit hrs required in the program, all students are required to take HNSC 7200 as well as 6 credit hours in Human Nutritional Sciences at the 700/7000 level. These 6 credit hours must comprise courses from at least two of the following three general subject areas: Foods (Flavour Chemistry and Sensory Properties of Food, Chemistry and Function of Food Lipids, Nutraceuticals in Human Health, Advanced Problems in Foods), Community Nutrition (Qualitative Research in Nutrition, Nutrition in Public Policy, Theoretical Approaches to Dietary Change Interventions, Nutritional Epidemiology, Advanced Problems in Nutrition) and Metabolic Nutrition (Vitamin Nutrition and Metabolism, Mineral and Trace Element Nutrition and Metabolism, Lipid Nutrition and Metabolism, Protein Nutrition and Metabolism, Phytochemical Nutrition and Metabolism, Energy and Carbohydrate Nutrition and Metabolism).

Note that in addition to the required courses in the M.Sc. program, if a student's background is weak in specific areas related to his/her area of research, additional courses may be required. Any additional course requirements beyond the minimum stated above and subject to the Faculty of Graduate Studies' maximum of 24 credit hrs will be determined by the student's thesis advisory committee and may include courses in statistics, communications, research methods or specialized courses in foods or nutrition. Students must also complete a thesis project in food and/or nutrition research.

Second language reading requirement: none, unless specified in program of study.

Expected time to graduate: two years.

### PhD in Human Nutritional Sciences

#### Admission

Graduate Studies

Applicants must meet the University of Manitoba Graduate Studies general regulations. A complete application will include at least one letter of recommendation from the student's intended advisor(s), attesting to the suitability of the candidate for Ph.D. studies in this program and when applicable another letter from the student's Master's degree advisor or equivalent.

The candidate will also provide a reference letter from someone who can provide general information on the ability of the candidate's ability to complete a graduate program.

### Application Deadlines

Canadian and U.S. students should send their application and all supporting documentation to the Faculty of Graduate Studies, **at least three months** prior to their intended start date. International students should send their application and all supporting documentation to the Faculty of Graduate Studies, **at least six months** prior to their intended start date.

### Program Requirements

For students entering the program with an MSc in another discipline or from another university, the course-work requirement will be determined by the Human Nutritional Sciences Graduate Studies Committee (HNSGSC). In considering the course-work requirement, the HNSGSC will be guided by the principle that the total number of courses taken in both the MSc and PhD will be the equivalent of 18 credit hours, of which 15 credit hours must be in nutrition at the 7000 level. A second guiding principle will be that at least three credit hours of the nutrition courses taken (not including HNSC 7200.) will be from areas not directly related to the research area of the student and supervisor. All PhD students will be required to take HNSC 7200.

For students entering the program with an MSc in HNS from The University of Manitoba, the course-work requirement will consist of a minimum of 6 credit hours in HNS courses, all at the 7000 level. Of these 6 credit hours, three will consist of the seminar course: HNSC 7200. This will result in a total of 18 credit hours being taken in the MSc and PhD programs, if both degrees are taken at The University of Manitoba. Of these 18 credit hours, 15 will be HNS courses.

### Human Nutritional Sciences

**HNSC 7070** Advanced Problems in Foods Cr.Hrs.3 (Formerly 030.707) Selected topics related to consumer acceptability of foods.

**HNSC 7110** Advanced Problems in Nutrition Cr.Hrs.3 (Formerly 030.711) Studies of selected problems and programs in community nutrition emphasizing program planning and evaluation. Offered 1999-2000 and alternate years.

**HNSC 7200** Seminar in Food and Nutrition Research Cr.Hrs.3



(Formerly 030.720) A critical study of selected topics in food and nutrition research involving oral presentations and discussions. This is a required course for all M.Sc. students in the department of Foods and Nutrition.

**HNSC 7440 Protein Nutrition and Metabolism Cr.Hrs.1.5**  
(Formerly 030.744) Lectures and critical reviews will be used to discuss recent/significant research advances in the fields of protein nutrition and metabolism, pertinent to mammalian physiology. Also offered as ANSC 7440 by the Department of Animal Science. Offered in 2007-08 and alternate years thereafter.

**HNSC 7450 Energy and Carbohydrate Nutrition and Metabolism Cr.Hrs.1.5**  
(Formerly 030.745) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of energy/carbohydrate nutrition and metabolism, pertinent to mammalian physiology. Also offered as ANSC 7450 by the Department of Animal Science. Offered in 2007-08 and alternate years thereafter.

**HNSC 7460 Lipid Nutrition and Metabolism Cr.Hrs.1.5**  
(Formerly 030.746) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of lipid nutrition and metabolism, pertinent to mammalian physiology. Also offered as ANSC 7460 by the Department of Animal Science. Offered in 2006-07 and alternate years thereafter.

**HNSC 7470 Vitamin Nutrition and Metabolism Cr.Hrs.1.5**  
(Formerly 030.747) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of vitamin nutrition and metabolism, pertinent to mammalian physiology. Also offered as ANSC 7470 by the Department of Animal Science. Offered in 2006-07 and alternate years thereafter.

**HNSC 7480 Mineral and Trace Element Nutrition and Metabolism Cr.Hrs.1.5**  
(Formerly 030.748) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of mineral nutrition and metabolism, pertinent to mammalian physiology. Also offered as ANSC 7480 by the Department of Animal Science. Offered in 2006-07 and alternate years thereafter.

**HNSC 7490 Phytochemical Nutrition and Metabolism Cr.Hrs.1.5**  
(Formerly 030.749) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of phytochemical nutrition and metabolism, pertinent to mammalian physiology. Also offered as ANSC 7490 by the Department of Animal Science. Offered in 2007-08 and alternate years thereafter.

**HNSC 7500 Chemistry and Function of Food Lipids Cr.Hrs.1.53**  
(Formerly 030.750) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of food lipid development, processing, analysis and function. Offered in 2002-03 and alternate years thereafter.

**HNSC 7510 Flavour Chemistry and Sensory Properties of Foods Cr.Hrs.1.5**  
(Formerly 030.751) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of

food flavour and off-flavour chemistry and in the mechanics of sensory assessment. Offered in 2002-03 and alternate years thereafter.

**HNSC 7520 Nutraceuticals in Human Health Cr.Hrs.1.5**  
(Formerly 030.752) Lectures and critical reviews will be used to discuss recent/significant research advances in the field of nutraceuticals and the impact of food and raw materials on nutrition and human health. Offered in 2003-04 and alternate years thereafter.

**HNSC 7530 Nutrition in Public Policy Cr.Hrs.1.5**  
(Formerly 030.753) Focus on public policy related to the nutrition and health status of Canadians, including food and nutrition policies, health public policy, influence of trade regulations, context of health systems, social and economic environments. Offered in 2002-03 and alternate years thereafter. Prerequisite: permission of instructor

**HNSC 7540 Nutritional Epidemiology Cr.Hrs.1.5**  
(Formerly 030.754) Focus on epidemiology principles and survey techniques for assessing and predicting individual nutritional status, assessing relevant community resources and reporting results to granting agencies and decision makers. Offered in 2003-04 and alternate years thereafter. Prerequisite: permission of instructor

**HNSC 7550 Qualitative Research in Nutrition Cr.Hrs.1.5**  
(Formerly 030.755) A critical examination of methodological, analytical and interpretive issues in qualitative research as applied to nutrition and food-related issues. Offered in 2003-04 and alternate years thereafter. Prerequisite: permission of instructor

**HNSC 7560 Current Topics in Human Nutrition Cr.Hrs.1.5**  
(Formerly 030.756) Lectures and critical reviews will be used to discuss recent/significant research advances in nutrition and foods research.

**HNSC 7570 Theoretical Approaches to Dietary Change Intervention Cr.Hrs.1.5**  
(Formerly 030.757) Theoretical approaches to dietary behaviour change and critical analysis of their application in nutrition intervention programs for individuals and populations. Offered in 2003-04 and alternate years thereafter. Prerequisite: permission of instructor

**HNSC 7580 Applied Nutrition Cr.Hrs.6**  
(Formerly 030.758) Experience in the application of nutrition theory to the management of nutrition related disease in a clinical setting supervised by registered dietitians. Prerequisites: Undergraduate coursework which meets the requirements for admission to Dietitians of Canada. An application is required for limited enrolment. Not to be used toward the fulfillment of the minimum 12 credit hours required in the program. Not to be held with the former 030.719.

## Icelandic

**Head:** (Acting) Birna Bjarnadóttir

**Campus Address/General Office:** 357 University College

**Telephone:** (204) 474 8487



**Fax:** (204) 474 7591

**Email Address:** [um\\_icelandic@umanitoba.ca](mailto:um_icelandic@umanitoba.ca)

**Website:** <http://umanitoba.ca/icelandic>

**Academic Staff:** Please refer to the website for Faculty information: <http://umanitoba.ca/icelandic>

The Department of Icelandic offers innovative and challenging programs of study leading up to the M.A. degree. The aim of the program is to develop student knowledge of Icelandic language, literature and culture and to train students in the methods of scholarship. Graduate courses are offered on demand and can often be tailored to particular interests. Courses in the Icelandic language and literature allow students access to the fascinating world of medieval Icelandic culture, and constitute an important addition to the study of medieval, religious, literary and linguistic history of Western Europe. Iceland's size, geographical isolation, relatively homogeneous population, and history of documentation has made it a popular area for comparative research in a wide range of disciplines. Modern Icelandic provides access to the wealth of sources recorded in Iceland and North America relating to the realms of religion, law and politics, geology and culture, that allow for such comparative studies. Courses which focus on North American-Icelandic history, culture, literature, film and translation provide unique insights into Canadian culture and history, and allow access to sources which enable students to do comparative research in the context of Trans-Atlantic culture.

#### Fields of Research

The department actively pursues and promotes the study of the Icelandic language and literature as well as North American-Icelandic culture. Research activities in the department have served to examine the role of North American Icelanders as a cultural group in Canada and to highlight the contribution of Icelandic Canadians to Canadian and Icelandic culture and literature through publications, translations and conferences. Scholarship in the department has also focused on the history of aesthetics in Icelandic writings, the challenge of the saga heritage and the poetics of immigration. The department supports a strong program of scholarly publications, of which the Icelandic Studies Series of the University of Manitoba Press is an example. Publications include: *The Book of Settlements: Landnámabók* (1972); *A History of the Old Icelandic Commonwealth* (1974); *Edda: A Collection of Essays* (1983); and *Laws of Early Iceland: Grágás I & II* (1980, 2000).

#### Research Facilities

The Department of Icelandic is complemented by the Libraries Icelandic Collection, founded in 1936. It has been designated a selective depository by the Government of Iceland, receiving a limited number of the more important publications to come out in Iceland each year. This collection is the largest of its kind in North America excepting the Fiske collection at Cornell University, and includes books, periodicals, newspapers, manuscripts, microfilms and audio-visual materials. It is the main research facility for research on Icelanders in North America.

#### M.A. in Icelandic , Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Students with other degrees or backgrounds may be eligible for admission to a pre-Master's program to the satisfaction of the department. Contact the Icelandic Department for further information.

#### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

#### Program Requirements

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, requirements for the M.A. degree include a thesis and three courses (18 credit hours) at the 700/7000 level in the Icelandic Department.

Second Language Reading Requirement: Yes

Expected Time to Graduate: Two years

#### Ph.D. in Icelandic,

There is no Ph.D. Program in Icelandic.

#### Icelandic

**ICEL 7040** Advanced Icelandic Cr.Hrs.6  
(Formerly 012.704) Advanced modern Icelandic usage through translation (English-Icelandic/Icelandic-English), practical exercises, and free composition. Study of fictional and non-fictional texts.

**ICEL 7050** Individual Modern Authors Cr.Hrs.6  
(Formerly 012.705) Icelandic literature in the 20th century. Study of modern and contemporary Icelandic literature focusing on a major author.

**ICEL 7060** Old Icelandic Prose: Seminar Cr.Hrs.6  
(Formerly 012.706) Study of Old Norse-Icelandic sagas focusing on a specific genre or theme.

**ICEL 7070** Old Icelandic Poetry: Seminar Cr.Hrs.6  
(Formerly 012.707) Study of Old Norse-Icelandic poetry focusing on a specific genre or theme.



## Immunology

The Department was established at the University of Manitoba in 1969 as the first Department of Immunology in Canada. Today it is known and respected internationally as a centre for Immunology research and teaching. A major strength of the program is the excellent research environment, reflected in the strong research faculty, award-winning students, high levels of external research funding and availability of leading-edge research equipment. The Department offers a diverse program of graduate studies and research in Immunology, leading to M.Sc. and Ph.D. degrees. The main objectives of the Program are to: 1) facilitate development of a solid academic base and critical thinking skills in the field of immunology; 2) develop expertise in modern techniques of immunologic research, through a strong laboratory research training component; 3) provide students with exposure to a wide range of biomedical research areas to foster development of a broad scientific perspective and multi-disciplinary outlook; 4) provide opportunities for students to develop essential professional skills, such as oral and written scientific communications, grant-writing, mentorship, communicating science to the media and public, job searches, interpersonal skills and intellectual property. Traditional coursework is kept to a minimum, and alternative assessment approaches are used to reduce in-class exams, such as student debates, student-led "mini-teaching" sessions or take-home exams based on experimental design and problem-solving. Our weekly seminar series brings in an excellent array of local, national and international speakers to provide students with exposure to a wide range of research topics and foster multi-disciplinary thinking. Our Department hosts a number of activities in which our students participate in teaching what they do to undergraduates or high school students. In addition to the academic program components, the laboratory research component of the program features an excellent range of unique technical resources and expertise. A culture of collaborative sharing of resources and expertise further facilitates development of students' research. Unique funding opportunities available to Immunology students include the Mindel and Tom Olenick Research Award in Immunology Entrance Scholarship (administered by the University of Manitoba). For more information consult our webpage: <http://umanitoba.ca/faculties/medicine/units/immunology/>.

### Fields of Research

The research program of the over 30 Faculty members who participate in the Program in Immunology is strongly supported by peer-reviewed external funding from international, national and local sources. Immunology researchers at the University of Manitoba have as their main research interests: Allergy and asthma, antibody production, autoimmunity, including arthritis and colitis, cancers of the immune system, including leukemia and lymphoma, cancer stem cells, immune responses to vaccination, gene therapy of immune cells, immune regulation and immune memory, immune response to viral, bacterial and parasitic diseases, leukocyte cell biology and signal transduction, leukocyte receptors and adhesion molecules, molecular genetics of the immune system, proteomics and systems biology, and

transplantation immunology. Numerous collaborations between those interested in fundamental and clinical immunology are in place, providing opportunities for translational research.

### Research Facilities

The Department is located in new state of the art, open-concept laboratories in the Apotex Centre on the University's Bannatyne Campus. The Program offers extensive instrumentation for research in contemporary immunology. These include basic and clinical immunology research laboratories, core equipment for a broad range of molecular and cellular immunology techniques, housing for small animals (both conventional SPF and for creation of transgenic mice), instrumentation for flow cytometry analysis and high speed sorting, confocal microscopy, a proteomics centre, a student computer laboratory and access to departmental and University wide libraries. Strong scientific links exist with the Manitoba Institute of Child Health, Manitoba Institute of Cell Biology, Manitoba Centre for Proteomics, National Microbiology Laboratory, Health Sciences Centre, Children's Hospital and Canadian Blood Services, all in Winnipeg.

### M.Sc. in Immunology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

**For International applications, please note** that although the Faculty of Graduate Studies requires a minimum cumulative grade point average of 3.0 (B) for admission, and a TOEFL score of 213 (computer based test), or 550 (paper based test) or 80 (internet based test), many Departments have higher minimum standards.

The Department of Immunology requires a minimum TOEFL score of 250 (computer based) or 600 (paper based) or 88 (internet based, with a minimum of 20 points from each section of the test.). In most cases a grade point average (GPA) above 3.5 is needed to be competitive for available positions in the program.

### Application Deadlines

For sessions beginning:	International	Canadian
September	February 1	July 1
January	August 1	November 1
May	December 1	March 1
July	February 1	May 1



### Program Requirements

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. IMMU 7020 is the required core course.

Students whose first language is not English must contact the University of Manitoba English Language Centre to register for the Canadian Test of English for Scholars and Trainees (CanTEST). This test must be taken while the student is in the first year of his/her graduate program.

Second language reading requirement: none

Expected time to graduate: typically 2 - 3 years.

The Department of Immunology [Supplemental Regulations](#) may be printed from their website.

### Ph.D. in Immunology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

**For International applications, please note** that although the Faculty of Graduate Studies requires a minimum cumulative grade point average of 3.0 (B) for admission, and a TOEFL score of 213 (computer based test), or 550 (paper based test) or 80 (internet based test), many Departments have higher minimum standards.

The Department of Immunology requires a minimum TOEFL score of 250 (computer based) or 600 (paper based) or 88 (internet based, with a minimum of 20 points from each section of the test.). In most cases a grade point average (GPA) above 3.5 is needed to be competitive for available positions in the program.

### Application Deadlines

For sessions starting:	International
September	February 1
January	August 1
May	December 1
July	February 1

### Program Requirements

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Candidates admitted directly into the Ph.D. program or wishing to transfer from the M.Sc. to the Ph.D. program must pass a thesis proposal defence taken within the first 18 months of their admission into the Department. Details of this defence is available on the [Department of Immunology website](#). In addition, the candidacy examination required of all students in the Ph.D. program will be in the

form of a research proposal. Details on this examination can be obtained from the department web site.

Students whose first language is not English must contact the University of Manitoba English Language Centre to register for the Canadian Test of English for Scholars and Trainees (CanTEST). This test must be taken while the student is in the first year of his/her graduate program.

Second language requirement: none

Expected time to graduation: 4 - 5 years

The Department of Immunology [Supplemental Regulations](#) may be printed from the website.

### Immunology

#### IMMU 7020 Immunobiology Cr.Hrs.6

(Formerly 072.702) This course provides a broad perspective of the evolving concepts of the mechanisms underlying the regulation of the immune response. Students admitted to this course will be expected to have sufficient background knowledge of general biology. Prerequisites: IMMU 7070 (or 072.707) plus cognate courses in molecular biology, or by consent of instructors.

#### IMMU 7030 Seminars in Immunology Cr.Hrs.3

(Formerly 072.703) Presented by senior graduate students on advanced research topics not directly related to the student's thesis subject. The purpose of this course is to test the student's ability to evaluate critically a specialized topic both orally and in an essay form. This course is graded pass/fail. Prerequisites: IMMU 7110 (or 072.711) or IMMU 7020 (or 072.702), or by consent of instructors.

#### IMMU 7040 Immunological Methodology Cr.Hrs.3

(Formerly 072.704) This lecture course is designed to provide an understanding of modern methods used for basic research in Immunology or other biomedical disciplines utilizing immunological techniques. Prerequisite: IMMU 7070 (or 072.707), or by consent of instructors.

#### Canadian IMMUNOLOGY 7070 Introductory Immunology Cr.Hrs.3

(Formerly 072.707) This course provides a broad survey of modern immunology, covering such topics as molecular concepts of antigenic specificity, chemistry of antibodies and their interactions with antigens and cells, regulation of the immune response, transplantation and tumor immunology. Prerequisites: general courses in chemistry, biochemistry and biology, or by consent of instructors.

#### IMMU 7090 Selected Topics in Immunology Cr.Hrs.3

(Formerly 072.709) Lectures, tutorials and assigned reading on topics not normally covered in other courses such as IMMU 7110 (or 072.711) and IMMU 7020 (or 072.702) or 036.719. Course content will vary depending on the advances in the field and research interests of the Department. Prerequisites: Consent of instructors.

#### IMMU 7100 Advanced Topics in Immunology Cr.Hrs.3

(Formerly 072.710) Lectures, tutorials and assigned reading



at an advanced level on topics which may have been covered in other courses offered by the Department and which require treatment at a higher level either due to advances in the field or changes in the research interests of the Department. Prerequisites: IMMU 7110 (or 072.711) and/or IMMU 7020 (or 072.702), or by consent of instructors. This course is graded on a pass/fail basis.

**IMMU 7110** Molecular Immunology Cr.Hrs.6 (Formerly 072.711) This course covers in depth the structure, molecular biology and function of immunoglobulins, histocompatibility antigens, regulatory factors receptors and adhesion molecules on cells of the immune system; mechanisms of immunochemical reactions and the immunogenicity of antigens. Prerequisites: IMMU 7070 (or 072.707) plus undergraduate courses in organic chemistry, physical chemistry and biochemistry, or by consent of instructors. Not to be held with the former 072.701.

## Interdisciplinary Graduate Programs and Courses

### Faculty of Science Microbiology

MBIO 7100 Advanced Concepts in Molecular. Biology

MBIO 7110 Advances in Microbial Genetics

MBIO 7170 Current Topics in Mammalian Cell Culture

### Zoology

ZOOL 7340 Problems in Developmental Zoology 1

ZOOL 7350 Problems in Developmental Zoology 2

### Interdepartmental Ph.D. in Food and Nutritional Sciences,

**Head:** R.G. Fulcher  
**General Office:** 250 Ellis Building  
**Telephone:** (204) 474 9621  
**Fax:** (204) 474 7630  
**E-mail:** [foodcas@ms.umanitoba.ca](mailto:foodcas@ms.umanitoba.ca)  
**Website:** [http://umanitoba.ca/afs/food\\_science](http://umanitoba.ca/afs/food_science)  
**Academic Staff**

See the academic staff lists in departments of Animal Science, Food Science and Human Nutritional Sciences.

### Program Information

Programs at the doctorate level are administered through the Interdepartmental Ph.D. program in Food and Nutritional Sciences involving the departments of Human Nutritional Sciences, Food Science, and Animal Science. Admission usually requires a research Master's degree in an

appropriate discipline (food science, human nutrition, biochemistry, microbiology, etc.)

### Fields of Research and Research Facilities

See information in this Calendar under the three participating departments

### Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, a research Master's degree in the general areas of food or nutritional sciences is required.

### Application Deadlines

Students may begin their program on either September 1, January 1, May 1 or July 1. For admission on each of these start dates, Canadian/U.S. students should send their application forms with complete supporting documentation to Faculty of Graduate Studies no less than six (6) months before the intended start date. Non-Canadian/US students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than 7 months before the intended start date.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. All students are required to take a minimum of 15 credit hours of courses at the 700/7000 level which will include FDNT 7120 Advanced Seminar in Food and Nutritional Sciences and at least one 700/7000 level course from each of the two participating food departments and complete a thesis research program. For additional information, candidates should contact the head of any of the three participating departments.

Second language reading requirement: none

Expected time to graduate: four years.

Further are available in the Calendar under Animal Science, Human Nutritional Science and Food Science. For additional information, candidates should contact the head of any of these participating departments.

### Interdepartmental Graduate Program in Genetics,

**Graduate Co-Chairs:** Dan Gietz, Biochemistry and Medical Genetics, and Brian Fristensky, Plant Science  
**Program Office:** 336 Basic Medical Sciences  
**Telephone:** (204) 789 3593  
**Fax:** (204) 789 3900  
**E-mail:** [gqp@umanitoba.ca](mailto:gqp@umanitoba.ca)  
**Website:** <http://umanitoba.ca/medicine/units/biochem/gradprogram.html>



### Academic Staff

See academic staff lists in the departments of: Animal Science, Plant Science, Biochemistry and Medical Genetics, Microbiology and Zoology.

### Program Information

A broad knowledge in the field of genetics requires a study program of an interdisciplinary nature. Courses in genetics and directly related fields are currently offered in many different departments, and although the term "genetics" may not always appear as such in the course title, the subject matter is largely genetic in content.

To accommodate students wishing to do graduate work in genetics and in recognition of the multidisciplinary nature of genetics, an interfaculty graduate program in genetics has been established which is organized by the Genetics Program Committee comprising representatives from the faculties of Agricultural and Food Sciences, Medicine, and Science. The broad base of the Genetics Program Committee will provide the student with the best possible advice on program selection for a career in genetics. The Department of Biochemistry and Medical Genetics is administratively responsible for students registered in the human genetics component of the Genetics Graduate Program. Students wishing to undertake graduate studies in human genetics should seek advice directly from the chair of the graduate studies committee of the Department of Biochemistry and Medical Genetics.

### Admission

The first step in the application process is for the applicant to contact directly the professor with whom he or she wishes to study. If a professor can be identified who is willing to supervise the student's research, and if funding for the student is available, a formal application should be submitted. Students wishing to undertake studies in human genetics should apply directly to the Department of Biochemistry and Medical Genetics. Students wishing to enter the Graduate Genetics Program in areas other than human genetics should apply to the chair of the Genetics Program Committee. Admission will be competitive and acceptance will be based on academic credentials and subject to availability of space and resources. The normal entrance requirements will be an Honours B.Sc. with emphasis on genetics. Students not fulfilling the entrance requirements will be required to undertake a pre-Master's program designed specifically to fulfil deficiencies in their background.

### Application Deadlines

The Genetics Graduate Program allows students to begin their program on either 1 September, 1 January or 1 May. For admission for each of these start dates, Canadian students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than four (4) months before the intended start date. Non-Canadian students should send their applications with

complete supporting documentation to arrive no later than seven months (7) before the intended start date.

### Interdepartmental M.Sc. in Genetics, Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. A minimum of 12 credit hours exclusive to IMED 7130 Graduate Seminar in Genetics 1, will be required. A minimum of six credit hours must be obtained in courses listed in the Genetics course list. A thesis demonstrating proficiency in the field of study chosen by the student will be required.

### Interdepartmental Ph.D. in Genetics, Program Requirements

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. A minimum of 12 credit hours of coursework at the 700/7000 level, exclusive of IMED 7140 Graduate Seminar in Genetics 2, beyond the Master's level will be required. At least six of the 12 credit hours must be obtained for courses in the Genetics course list.

A qualifying examination may be held upon the recommendation of the selection committee and/or supervisor and the advisory committee. The format of the examination will be determined by the examining committee and the student notified no less than three months before the date of the examination.

A candidacy examination will be required of all students registered for a Ph.D. examination as specified by the Faculty of Graduate Studies. The majority of members of the examination committee will be members of the Genetics Program Committee.

### Faculty of Agricultural and Food Sciences Interdiscipline Grad, Animal Science

ANSC 7220 Genetic Principles of Animal Improvement

ANSC 7400 Quantitative Genetics in Animal Science

ANSC 7410 Advanced Animal Genetics

ANSC 7520 Special Topics in Animal Improvement

### Plant Science

PLNT 7160 Advanced Genetics

PLNT 7670 Quantitative Genetics and Plant Breeding



PLNT 7680 Plant Molecular Genetics

PLNT 7690 Bioinformatics

**Faculty of Medicine Interdiscipline Grad,  
Biochemistry and Medical Genetics**

BGEN 7040 Seminars in Human Genetics

BGEN 7070 Special Topics in Human Genetics

BGEN 7090 Principles and Practice of Human Genetics

BGEN 7100 Mammalian and Human Cytogenetics

BGEN 7110 Human Biochemical and Molecular Variation

BGEN 7120 Laboratory Methods in Human and Medical Genetics

BGEN 7130 Genetics Epidemiology of Human Populations

BGEN 7140 Clinical Genetics

BGEN 7160 Theory and Practice of Genetic Counselling

BGEN 7170 History of Human Genetics

**Interdepartmental Interdiscipline Grad,  
IMED 7090 Cell Biology**

IMED 7240 Nucleic Acids: Manipulation, Structure and Function

Individual Interdisciplinary Programs,  
The Faculty of Graduate Studies provides the special opportunity to students, with a proven track record, of registering in an Individual Interdisciplinary Program<sup>1</sup>. Such a program combines substantial aspects of the existing programs of at least two departments into a unique syllabus which lies outside of established department boundaries. Since the Individual Interdisciplinary Program places additional demands and responsibilities upon the student to assemble a committee, to formulate a research proposal in advance of admission and, to negotiate a program of studies with his/ her committee, the eligibility requirements are more stringent than those for discipline based graduate programs. The regulations presented below and all general regulations of the Faculty of Graduate Studies (e.g., admission requirements, registration procedures, thesis regulations, minimum course requirements, advance and transfer credit, time limits, requirements for graduation, oral examinations, academic performance and the like) apply to Individual Interdisciplinary Programs. These regulations can be accessed from the Faculty of Graduate Studies web site: [http://http://umanitoba.ca/graduate\\_studies/programs/master](http://http://umanitoba.ca/graduate_studies/programs/master)

[s/iip/regulations.htm](#). Each department currently offering a discipline-based graduate level program is eligible to offer an individual interdisciplinary stream<sup>2</sup> in which the subject area of that department is the major focus<sup>3</sup> of the Individual Interdisciplinary Program<sup>4</sup>. The department is thus considered the "home" department of the IIP student<sup>5</sup>. (Note: the department should be contacted ahead of time to ensure their participation in the IIP) Because of the individuality of each program and the need for special guidance, an Advisory Committee is required for all IIP students.

The "home" Department Head (or designate) will ensure that the student and the advisor receive information regarding scholarship and relevant Faculty procedures and the like (i.e., information that would normally be distributed to Department heads and/or Chairs of graduate programs).

Eligibility for Admission Interdiscipline Grad,  
In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, applicants for an Individual Interdisciplinary Program are required to have a superior academic record (3.5 GPA or equivalent) with a substantial grounding in at least one of the disciplines<sup>6</sup> of the proposed Individual Interdisciplinary Program. The application procedures and regulations, as determined by the Faculty of Graduate Studies, can be found on the Faculty of Graduate Studies web site:

[http://umanitoba.ca/graduate\\_studies/programs/masters/iip/regulations.htm](http://umanitoba.ca/graduate_studies/programs/masters/iip/regulations.htm) Please be aware that the home department may have additional application requirements and procedures and should be contacted directly for further information.

Application Deadlines Interdiscipline Grad,  
Contact the home department for applicable deadlines for submission of application materials.

**Master's Individual Interdisciplinary Programs,  
Admission**

Students should normally have an Honours Bachelor degree or equivalent in one of the disciplines of the proposed IIP.

**Program Requirements**

In addition to the minimum program requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, please consult the Faculty of Graduate Studies web site: [http://umanitoba.ca/graduate\\_studies/programs/masters/iip/degree\\_req.htm](http://umanitoba.ca/graduate_studies/programs/masters/iip/degree_req.htm)

**Ph.D. Individual Interdisciplinary Programs,  
Admission**



Students should normally<sup>7</sup> have a Master degree or equivalent in one of the disciplines of the proposed IIP.

### Program Requirements

In addition to the minimum program requirements of the Faculty of Graduate Studies that are found in the Graduate Studies Regulations Section of this *Calendar*, please consult the web:

[http://umanitoba.ca/graduate\\_studies/programs/phd/iip/degree\\_req.htm](http://umanitoba.ca/graduate_studies/programs/phd/iip/degree_req.htm)

<sup>1</sup> Where the word department appears, the word Faculty or Institute is to be assumed where appropriate.

<sup>2</sup> A department's eligibility to offer an Individual Interdisciplinary Program is limited to the level of the degree currently being offered by the department. For example, if only a Master's level program is offered by the department, then that department is eligible to be the home department for students in a Master's level Individual Interdisciplinary Program, only. Although this particular department may participate as a minor department in a Ph.D. IIP, it is not eligible to be the home department of a Ph.D. IIP student. A Faculty member in a department without a graduate program at the level he/she wishes to supervise an IIP student may do so providing that the Faculty member is a member of the Faculty of Graduate Studies and has the approval to supervise from the "Home" department. Note: the supervisor may or may not need to be appointed as an adjunct to the home department.

<sup>3</sup> "Major Focus" refers to the subject area/discipline of a department in which the credit hours of instruction to be taken are more than or equal to those to be taken in any other participating department. In a two-department combination, assuming a 15 credit hour program, 9 credit hours of course work would be taken in the major focus area, with a minimum of 6 to be at the 700/7000 level.

<sup>4</sup> The intent of an IIP is to bring together existing discipline-based programs in such a way as to form a unique program tailored to an individual research project and/or study aim that cannot otherwise be accommodated by existing programs. Masters programs are used to construct a Masters level IIP and Ph.D. programs are the building blocks for a Ph.D. level IIP. While there is some flexibility in the actual programs used to construct an IIP, it is imperative that a Masters level IIP contain mostly existing Masters level programs, and Ph.D. programs must make up the majority if not all the component programs in a Ph.D. IIP.

<sup>5</sup> The "home" department counts this student as part of their complement for statistics purposes and would indicate them as "IIP Stream" students.

<sup>6</sup> It is anticipated that substantial grounding will be in the major focus area; if not, then justification must be given for consideration.

<sup>7</sup> Students who have completed an IIP Masters, may be considered for entry into an IIP PhD, provided that their

proposed course work and research in the PhD program is a clear extension or follow up of the Masters program. The determination of the appropriateness of the masters work as a prerequisite to the proposed PhD study will be made by the PhD Selection (Admission) Committee. The Dean of Graduate Studies (or delegate) must be present at such meetings.

### Ph.D. Studies for Aboriginal Scholars,

**Contact:** Dr. Deo H. Poonwassie  
**General Office:** 500 University Centre  
**Telephone:** (204) 474 7070  
**Fax:** (204) 474 7553  
**E-mail:** [poonwass@ms.umanitoba.ca](mailto:poonwass@ms.umanitoba.ca)

The University of Manitoba takes pride in providing world-class education to many of Canada's best and brightest students. By recognizing the potential in all who have a desire to learn and by offering students an exceptional education in a supportive environment, the university is proud to open its doors to a cohort of Aboriginal students at the Ph.D. level. The University of Manitoba is committed to recruiting and graduating Aboriginal students at all levels and areas of studies.

The University recognizes that the province has a large Aboriginal population. While strides are being made at the undergraduate level with a significant number of teachers, social workers, lawyers and medical doctors as evidence, there is an urgent need for expertise at the graduate level. This opportunity for those holding Masters degrees or honours Bachelor's degrees will fill a major void that currently exists in areas including university and college leadership positions in an environment of perpetual change. This is the university's contribution to growing our own expertise.

### Who Is Eligible

The University of Manitoba invites applications for Ph.D. studies from First Nations, Inuit and Metis scholars. Priority will be given to Manitobans.

### The Cohort

The Faculty of Graduate Studies is committed to facilitating the admission of a cohort of 15 Aboriginal students for doctoral studies. The cohort model of delivery will serve Aboriginal Ph.D. students to focus on common critical issues that deserve in-depth research and investigation. Though not a homogeneous group, students will have enough common experiences and goals to meld into a viable learning community. The Aboriginal context is important as a glue that will allow for peer cooperation and support. It will be possible to offer students common courses (if needed) such as indigenous research methodologies, critical paper writing and analysis; and spiritual guidance. The intent is to create a firm foundation that will work for success. With this heightened confidence and awareness, Aboriginal students will be able to contribute to the education of other persons in academia as well. Interdisciplinary and interpersonal



communications will promote cohort cohesion for Aboriginal Leadership in a changing globalized community.

### Admission Requirements

The minimum requirement for admission to the Ph.D. program is normally a Master's degree or equivalent from a recognized university and a cumulative GPA of 3.0 or equivalent in the last two years of full time study (60 credit hours). With special recommendation of the department concerned, applicants with an honours Bachelor's degree may be considered for entry to Ph.D. studies. Applicants must meet the specified requirements of a department or faculty. Some departments may require admission tests such as the Graduate Record Examination (GRE), the Graduate Management Aptitude Test (GMAT) or a qualifying research paper.

For further information applicants may contact the faculty or department in which they wish to study. Students may apply to any department or faculty that offers a Ph.D. program of studies.

\*\*\*There will be no admissions for the Fall 2011 term.

### Program Requirements

For students admitted with a Master's degree the normal minimum requirement is 12 cr.hr at the 7000 level or higher plus a thesis. A maximum of 24 cr.hr. is allowed toward the Ph.D. program. Note: some departments may require more or less credit hours.

After initial registration, the student is expected to complete the program within 7 years.

A residency requirement, consisting of two academic terms at the University of Manitoba, is required as part of the requirements of a Ph.D. program. Please consult specific department/faculty requirements. The student shall be geographically available to visit the campus regularly during this residence period.

### Advance and Transfer Credit

- Students may apply for advance credit for up to half the number of credit hours in their approved programs. These courses will have been taken before the student is admitted into the Ph.D. program.
- Students may receive transfer credit by taking courses at another institution while studying at the University of Manitoba.
- In both of the above cases the student must follow the procedures and regulations as outlined in the current U of M Graduate Calendar.

### Financial Assistance

A fundraising effort is in place to ensure that all students may receive up to \$20,000 in financial assistance. Those who qualify may apply for regular Ph.D. assistance on a competitive basis (see the Faculty of Graduate Studies website for more information). Students are encouraged to explore other sources of funding.

If you wish to obtain funding, please provide a statement of needs with your application.

### Architecture Interdisciplinary -6000 Level

**ARCG 6102** Topics in Environmental Processes Cr.Hrs.3  
A detailed study of some special topics in architecture, city planning, landscape architecture or interior design.

### Architecture Interdisciplinary -7000 Level

**ARCG 7100** Cr.Hrs.3  
This course is intended to promote critical thinking and provide opportunities to explore in detail key issues, ideas and theories about design and planning. Considerations may include: The relationship of design and planning theories to the evolution of design and planning practice; Ways in which design and planning theories have been understood to shape built form; Factors that have shaped design and planning theories, their commonalities and disjuncture; Theory discourse as a means of discovering design and planning meaning; The role of theory in practice, research and discovery; The relationship of design and planning theories to other discipline theories as a means of identifying commonalities of interest.

**ARCG 7102** Studio Topics in Environmental Processes Cr.Hrs.6

A detailed studio study of some special topics in architecture, city planning, landscape architecture or interior design.

**ARCG 7120** ADV RES DES PLN Cr.Hrs.3

This course is intended to explore research methods pertinent to the study of design and planning. The considerations to be examined may include: Potential research tools and techniques that are pertinent to the exploration of design and planning theory, practice and development; Exploration of emerging research processes and methodologies that inform minority and feminist discourse; Review of the evolution of design and planning methods; Analysis of the relationships between research methods in aligned disciplines as those research methods may inform design and planning understanding.

### Engineering Interdisciplinary Course

#### Description

**ENG 7010** The Engineering Design Process Cr.Hrs.3 (Formerly 130.701) Consideration of the Engineering Design process and the logic upon which it is based. Explores both the history and possible future directions of the process from technical, social and environmental points of view.



## Medicine Interdisciplinary

### IMED 7090 Cell Biology Cr.Hrs.6

(Formerly 165.709) Comprehensive introduction to the structure and function of cells. Prerequisite: consent of instructor.

### IMED 7100 Fundamentals of Neuroscience Cr.Hrs.6

(Formerly 165.710) An interdepartmental multidisciplinary course providing a comprehensive overview of cellular, molecular, developmental and systems neuroscience, as well as the neurobiology of disease. Emphasis will be placed on the application of the fundamental principles of neuroscience to contemporary lab research. ANAT 7270 (or 080.727) (offered in alternate years) will provide instruction in neuroanatomy and structure-function in the nervous system. Prerequisite: Permission of instructor.

### IMED 7101 Fundamentals of Neuroscience I Cr.Hrs.3

This lecture-based course covers the fundamentals of cellular/molecular neurobiology and development/plasticity of the nervous system. It will be offered on a two-year cycle. Students registering must seek the permission of the Course Director (not instructor).

### IMED 7102 Fundamentals of Neuroscience II Cr.Hrs.3

This lecture-based course covers the fundamentals of systems neuroscience and the neurobiology of disease. It will be offered on a two-year cycle. Students registering must seek permission of the Course Director (not instructor).

### IMED 7180 Molecular Approaches in Medical Research Cr.Hrs.3

(Formerly 165.718) For students who wish to understand advances made in medicine/biology through molecular and developmental approaches. Topics for discussion will be selected from the recent literature in consultation with participating students. The course will consist of lectures and discussions as well as written and oral presentation of papers by the students. Prerequisite: consent of instructor. Offered 2000-2001 and alternate years.

### IMED 7190 Medical Immunology Cr.Hrs.3

(Formerly 165.719) This interdisciplinary courses deals with the molecular and cellular mechanisms underlying immunologically mediated human diseases. Prerequisites: IMMU 7070 (or 072.707) plus cognate courses in human biology or by consent of instructors.

### IMED 7200 Cancer Biology Cr.Hrs.3

(Formerly 165.720) One hour per week on the basic (cellular and molecular) and clinical (diagnostic and treatment) aspects of cancer. Students will give one seminar and submit an essay on an assigned topic. Prerequisite: consent of instructor.

### IMED 7240 Nucleic Acids: Manipulation, Structure and Function Cr.Hrs.3

(Formerly 165.724) DNA technology; nucleic acid metabolism, including DNA replication, DNA repair, transcription, and RNA processing; gene/chromosome structure and rearrangement; mutation detection; gene therapy; positional cloning.

### IMED 7290 Developmental Biology Cr.Hrs.3

(Formerly 165.729) Emphasizes current principles of organ

system development and its application to transgenic approaches to gene function in the context of a whole, developing organism. Prerequisites: IMED 7090 (or 165.709) or ZOOL 2150 (or 022.215) and/or ZOOL 3070 (or 022.307) or consent of instructor. Offered in January 2003 and in alternate years thereafter.

### IMED 7300 Microscopy, Optics, Imaging and Analysis in Health Research Cr.Hrs.3

Theory and practice of modern microscopy, optics, molecular imaging, and analyses used in health research. Participants will gain in depth knowledge through seminars by local and external experts in the field and by hands-on laboratory work in preparing samples for imaging and analyses. Images will be acquired using equipment at the Genomic Centre for Cancer Research and Diagnosis at the Manitoba Institute of Cell Biology. Students will also participate in interactive tutorials and journal club.

### IMED 7302 Advanced Molecular Imaging Cr.Hrs.3

Seminar course in which students will learn about innovative methods and advanced analyses of molecular imaging in biomedical research including 2-dimensional and 3-dimensional fluorescent in situ hybridization, live-cell imaging, spectral imaging, and multi-colour imaging. Students will participate in hands-on laboratory exercises, interactive tutorials and journal club.

### IMED 7304 Functional Genomics and Whole Genome Analyses Cr.Hrs.3

Seminar course in which students will learn about functional genomics and approaches to whole genome analyses using array technologies. Course content will be delivered by local and external experts in the field. Students will participate in hands-on laboratory exercises with micro-array platforms and computer-based data analyses, interactive tutorials and journal club.

## Women's Studies Interdisciplinary

### WOMN 7170 Directed Readings in Women's Studies Cr.Hrs.3

(Formerly 156.726) Advanced study of selected topics in Women's Studies from an interdisciplinary perspective. The content of the course may vary from year to year and will be arranged by the coordinator of the Women's and Gender Studies Program in consultation with the appropriate representatives of departments. Prerequisite: consent of the Women's and Gender Studies coordinator and the instructor. Students must complete a Reading Course Application Form available from the Women's and Gender Studies office. As the course content will vary from year to year, students may take this course more than once for credit.

### WOMN 7270 Advanced Topics in Women's Studies Cr.Hrs.3

(Formerly 156.727) Advanced study of selected topics in Women's Studies from an interdisciplinary perspective. The content of the course may vary from year to year and will be arranged by the coordinator of the Women's and Gender Studies Program in consultation with the appropriate representatives of departments. Interdisciplinary analysis of contemporary issues, debates and theories in Women's Studies. Topics will vary from year to year and may include, for example, gender theory, sexualities, or feminist pedagogy. Prerequisite: consent of the Women's and



Gender Studies coordinator and course instructor. As the course content will vary from year to year, students may take this course more than once for credit.

## Interior Design

**Head:** Beecher, Mary Anne

**Campus Address/General Office:** 201 Russell Building

**Telephone:** (204) 474 9458

**Fax:** (204) 474 7532

**Email Address:** [interiordesign@umanitoba.ca](mailto:interiordesign@umanitoba.ca)

**Website:** <http://umanitoba.ca/interiordesign>

**Academic Staff:** Please see the website for Faculty information: <http://umanitoba.ca/interiordesign>

The department of Interior Design at the University of Manitoba has a long-established reputation for excellence and leads Canada in the development of the first Master of Interior Design program.

The Department offers two streams within the Master of Interior Design:

- The *first-professional program* is directed towards those interested in pursuing a career in Interior Design practice. The program emphasizes the creation of human-centred and context-based design solutions that respond to the needs of contemporary life. The course of studies consists of the design studio and support courses that develop the methods, processes, technical and theoretical foundations of interior design. There are opportunities for international and cross-cultural study through exchange programs and intercession studios. The program requires a minimum of two full years of study to complete.
- The *post-professional program* is directed to those who already hold a first-professional qualification in Interior Design. The program has a research orientation and is intended to further the knowledge base in specific areas of the discipline. The program requires a minimum of one and one half years of full-time study to complete. For additional information on delivery options and length of study requirements contact the department of Interior Design.

The first-professional program is accredited by the Council for Interior Design Accreditation. Graduates normally proceed to certification from the National Council of Interior Design Qualification (N.C.I.D.Q.) and membership in a professional interior design association. Master of Interior Design graduates are qualified to work nationally and internationally at the forefront of their profession, with a skill-set that includes strategic thinking, entrepreneurship, a research orientation and an ethical and environmentally responsible frame of reference.

Research expertise and individual interests of the faculty include the following: workplace environments, universal design, lighting and colour, history and theory, design education and profession-based research.

### Facilities

The Faculty of Architecture is housed in two main buildings on the Fort Garry campus; John A. Russell Architecture Building (JAR) and the Architecture 2 Building. The Faculty of Architecture has one open area computer lab (CADlab) along with a new media research area. A fully staffed and equipped woodshop and assembly room is available for student and faculty use. The Product Catalogue Collection provides current product information on interior and architectural materials. The Architecture and Fine Arts Library serves both the Faculty of Architecture and the School of Art. The library contains an extensive collection of books, journals, periodicals, maps and plans and videos and images.

### Admission

Applicants must meet the entrance requirements of the Faculty of Graduate Studies as well as the Interior Design admissions requirements found on the Interior Design website.

#### First-Professional Masters Program:

Applicants with an undergraduate degree in Interior Design or an undergraduate degree in Environmental Design (Interior Environment Option) from the Faculty of Architecture are eligible for direct admission. Applicants with degrees in other fields of study are assessed on a case-by-case basis and may be eligible for admission to a pre-master program of study. For additional information contact the department of Interior Design.

#### Post-Professional Masters Program:

A first-professional degree in Interior Design is required for admission.

#### Application Deadlines:

Applicants from outside Canada and the United States:  
December 1

Canadian citizens and American citizens: January 15

For further information contact the graduate student advisor, department of Interior Design.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section. Detailed requirements for Interior Design programs are found on the Interior Design website.



Post-Professional Stream - 21 Credit Hours

Professional Stream - 48 Credit Hours

Second language reading requirement: none

Expected time to graduation in full-time study: Post-Professional Stream, 1.5 years; Professional Stream, 2 years.

### PhD Interior Design,

A Ph.D. in Design and Planning is offered.

## Interior Design

**IDES 7000** Graduate Seminar in Interior Design Cr.Hrs.3

A seminar course for students registered in thesis or practicum designed to assist in the determination of a relevant topic; formulation of a hypothesis, academic writing sources of information and the appropriate form and content of the thesis practicum.

**IDES 7170** Design Research Methods Cr.Hrs.3

(Formerly 051.717) Building on EVIE 3640 (or 079.364) Design Inquiry, this course addresses the role of quantitative and qualitative research methods in interior design. The subject will address the principles of quantitative and qualitative research methodologies; focusing on the relationship between research and interior design. Specifically identifying gaps in existing research; critical analysis and interpretation of existing research; representation of research intentions, methodologies, and results.

**IDES 7180** Theory Seminar 1 - Contemporary Issues in Design Cr.Hrs.3

(Formerly 051.718) A theoretical exploration of contemporary design issues as they apply to Interior Design, supporting the work of design studio. Historical precedent in relation to human activity, sensory stimulus, technological and social change, ecological awareness, and aesthetic judgment forms the context for discussion and debate. Prerequisite: EVIE 3650 and EVIE 3660 or equivalent.

**IDES 7190** Theory Seminar 2 - Critical Perspectives Cr.Hrs.3

(Formerly 051.719) An examination of theoretical and philosophical approaches to design. Examines the practice of interior design through a variety of critical and historical perspectives. Different modes of thought and manners of questioning will be used to debate issues. Prerequisite: EDES 7180 (or 051.718).

**IDES 7200** Masters Studio 1 - Strategic Issues Cr.Hrs.6

(Formerly 051.720) Master Studio 1 focuses on developing strategic approaches to design, which address complex contextual issues and adaptive reuse of large-scale public space. Studio explorations responding to a range of complex contextual design issues. The studio focuses on methods of strategic analysis such as mapping and scenario planning to inform the configuration and resolution of new interior spatial

forms. Large scale public space and the changing nature of contemporary culture will form the basis for the design projects.

**IDES 7210** Masters Studio 2 - Events and Making Cr.Hrs.6 (Formerly 051.721) Master Studio 2 is focused on the Event: exploring the nature of temporary inhabitation through the creation of a unique place/installation as the site for cultural/community celebration. Design/build studio explorations focussed upon issues of temporality, technology, and design intention. Small-scale public places and cultural context will form the basis for design studio projects.

**IDES 7220** Masters Studio 3 Cr.Hrs.6

(Formerly 051.722) Focuses on the creation of specialized interior environments informed by traditional and emerging forms of research. Research into Practice: a research-focused, problem based, studio bridging Studio 3 will examine specialized interior professional design issues and diverse research sources. Master projects in areas such as: work environments, healthcare, education or hospitality, through precedent and research. The studio may be run as a collaborative program and may be delivered as an International studio experience.

**IDES 7230** Sensory Technology 4 Cr.Hrs.3

(Formerly 051.723) Examination of the influences and effects of emerging communication systems and building technologies; building and furniture systems; in the context of human well being and environmental concerns. The study of the design consequences and environmental impact of interior services and systems; communication technologies; building regulations, codes and infrastructure; detailing and specification of projects drawn from design studio.

**IDES 7240** Sensory Technology 5 Cr.Hrs.3

(Formerly 051.724) A self-directed exploration of new and/or divergent technologies, with significance to the design of interior environments. Students will propose a self-directed design or research project, nominating a full time staff advisor; for the subject instructors' approval. The proposal will clearly establish learning objectives and outcomes, and assessment criteria.

**IDES 7250** Professionalism and Practice Cr.Hrs.3

(Formerly 051.725) Introduction to the profession and practice of Interior Design; types of practice; regulating bodies; education; career development; professional and social responsibilities; examination and critique of practice, projects and design issues.

**IDES 7260** The Business of Interior Design Cr.Hrs.3

(Formerly 051.726) Management principles, administration, communication strategies and practice structures in the design process; development of skills in communication and procedures. The interior design business environment; ethics, responsibilities; related industries; job search techniques.

**IDES 7270** Travelling Concepts in Photography Cr.Hrs.3

This course is a graduate level photography elective that combines the practice, theory and history of photography. The outcome is to stimulate the use of photography as a visionary and hands-on tool. The final outcome will be an exhibition of student work.



## Kinesiology and Recreation Management

**Dean:** E. Jane Watkinson

**Campus Address/General Office:** 307 Max Bell Centre

**Telephone:** (204) 474 7493

**Fax:** (204) 261 4802

**Email Address:** [kinrecgrad@umanitoba.ca](mailto:kinrecgrad@umanitoba.ca)

**Website:**

[http://umanitoba.ca/faculties/kinrec/grad\\_programs](http://umanitoba.ca/faculties/kinrec/grad_programs)

**Academic Staff:** Please see the website for Faculty information: [http://umanitoba.ca/faculties/kinrec/grad\\_programs](http://umanitoba.ca/faculties/kinrec/grad_programs)

### M.Sc. (Kinesiology and Recreation), Fields of Research

The Master of Science (Kinesiology and Recreation) or Master of Arts (Kinesiology and Recreation) provides advanced education and research training within sub-disciplines including kinesiology, physical education, health, human performance, recreation, leisure, and tourism studies.

#### Research Facilities

Resources and supports for M.Sc. related research are jointly provided by the Faculty of Kinesiology and Recreation Management and the Health, Leisure and Human Performance Research Institute.

#### Admission

Admission requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. In addition, students require:

The completion of a four-year Kinesiology (BKIN)/Physical Education (BPE) or Recreation Management and Community Development (BRMCD) degree, or equivalent,

Or

Completion of a four-year undergraduate degree other than a BKIN/BPE or BRMCD, or equivalent, with a suitable academic background in the area of study,

Or

Completion of a Pre-Masters program at the University of Manitoba, or equivalent.

#### Application Deadlines

Students seeking fall (September) admission should submit their applications, with complete supporting documentation,

directly to the Faculty of Graduate Studies by February 1. Applications received after this deadline will be considered on a case-by-case basis. Applications from students interested in commencing their program in January or May will also be considered on a case-by-case basis. Please contact the FKRM Graduate Program Office for further information.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar.

Students must:

- Complete a minimum of 12 credit hours of course work approved by the faculty advisor. Of these 12 credit hours, a minimum of nine credit hours must be at or above the 7000 level; a minimum of six credit hours must be selected from the 7000 level course offerings in Kinesiology and Recreation Management with PERS 7000 Research in Kinesiology and Recreation Studies (3) being compulsory; and
- Enter the program with, or complete as part of the approved program of study, a minimum of six credit hours in research methods and/or statistics. The required course, PERS 7000 Research in Kinesiology and Recreation Studies, may be considered for credit towards this requirement.
- Within their program of study, students may complete a maximum of two PERS 7080 Directed Studies (different topics) for a total of six credit hours; however, only three credit hours will count towards the minimum 12 credit hour course work requirement

In addition to course work requirements, a student must engage in research and scholarship leading to the completion of a thesis, and attend a minimum of eight research seminars sponsored by the Health, Leisure and Human Performance Research Institute within the first two years of their program. NOTE: Seminar attendance is a supplementary regulation.

Second language reading requirement: None

Expected time to graduate: Two years

### M.A. (Kinesiology and Recreation), Fields of Research

The Master of Arts (Kinesiology and Recreation) or Master of Science (Kinesiology and Recreation) provides advanced education and research training within sub-disciplines including kinesiology, physical education, health, human performance, recreation, leisure, and tourism studies.

#### Research Facilities



Resources and supports for M.A. related research are jointly provided by the Faculty of Kinesiology and Recreation Management and the Health, Leisure and Human Performance Research Institute.

### Admission

Admission requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. In addition, students require:

The completion of a four-year Kinesiology (BKIN)/Physical Education (BPE) or Recreation Management and Community Development (BRMCD) degree, or equivalent,

Or

Completion of a four-year undergraduate degree other than a BKIN/BPE or BRMCD, or equivalent, with a suitable academic background in the area of study,

Or

Completion of a Pre-Masters program at the University of Manitoba, or equivalent.

### Application Deadlines

Students seeking fall (September) admission should submit their applications, with complete supporting documentation, directly to the Faculty of Graduate Studies by February 1. Applications received after this deadline will be considered on a case-by-case basis. Applications from students interested in commencing their programs in January or May will also be considered on a case-by-case basis. Please contact the FKRM Graduate Program Office for further information.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar.

Students must:

- Complete a minimum of 12 credit hours of course work approved by the faculty advisor. Of these 12 credit hours, nine credit hours must be at or above the 7000 level; a minimum of six credit hours must be taken from the 7000 level course offerings in Kinesiology and Recreation Management with PERS 7000 Research in Kinesiology and Recreation Studies (3) being compulsory; and,
- Enter the program with, or complete as part of the approved program of study, a minimum of six credit hours in research methods and/or statistics. The required course, PERS 7000 Research in Kinesiology and Recreation Studies, may be considered for credit towards this requirement.

- Within their program of study, students may complete a maximum of two PERS 7080 Directed Studies (different topics) for a total of six credit hours; however, only three credit hours will count towards the minimum 12 credit hour course work requirement.

In addition to the course work requirements, a student must engage in research and scholarship leading to the completion of a thesis, and attend a minimum of eight research seminars sponsored by the Health, Leisure and Human Performance Research Institute within the first two years of their program. NOTE: Seminar attendance is a supplementary regulation.

Second language reading requirement: None

Expected time to graduate: Two years

### Ph.D. in Applied Health Sciences,

The Faculty of Kinesiology and Recreation Management, along with the Faculty of Nursing, Faculty of Human Ecology, and School of Medical Rehabilitation, offers a multi-unit Ph.D. in Applied Health Sciences. Information on this program may be found in another section of this calendar.

## Kinesiology and Recreation Management - Phys Ed & Rec Studies General

**PERS 7000** Research in Kinesiology and Recreation Studies Cr.Hrs.3

Concepts and issues in designing, implementing, and disseminating research in areas broadly related to kinesiology and leisure. It is recommended that students complete this compulsory course within their first year of enrolment in the Master's program.

**PERS 7002** Community Development: Qualitative Methods Cr.Hrs.3

Students will be introduced to the traditions in the qualitative field, explore the theoretical foundations that underpin qualitative inquiries, and develop their capacity to think critically about ethical issues involved in the research process (e.g. working with marginalized groups and conducting community-based research).

**PERS 7004** Current Research in Physical Activity, Health and Leisure: Physical Aspects Cr.Hrs.3

This course will include the presentation of research evidence-based current thought on physical activity, health and leisure. Pre-requisites: courses in anatomy, physiology/exercise physiology, and biomechanics, or permission of course coordinator.

**PERS 7080** Directed Study in Kinesiology and Recreation Cr.Hrs.3

Provides opportunities for in-depth individualized study within a specific area of interest. Can be completed twice (different topics) for a maximum of 6 credits. Only 3 credits may count toward the minimum requirement of 12 credits.



## Physical Education

**PHED 7060** Social and Psychological Components of Sports and Physical Education Cr.Hrs.3  
(Formerly 057.706) The socio-psychological components of movement and the role of physical activity in the socio-psychological development of children. Prerequisite: PHED 3460 or 057.346 plus consent of instructor.

**PHED 7130** Anatomical Biomechanics Cr.Hrs.3  
(Formerly 057.713) A study of the biomechanical aspects of muscle and joint forces during human movements as they relate to the mechanics of athletic injuries and injury prevention. Prerequisite: PHED 3060 or 057.306 plus consent of instructor.

**PHED 7140** Mechanisms of Athletic Injuries Cr.Hrs.3  
(Formerly 057.714) The study and analysis of the causes and mechanisms of injuries in sports and exercise situations, including methods of prevention and rehabilitation. Prerequisite: PHED 7130 or 057.713.

**PHED 7160** Special Topics Cr.Hrs.3  
(Formerly 057.716) The study of the contemporary research and theory in a selected area. Topics will vary, depending on faculty expertise and student need.

## Recreation Studies

**REC 7010** Leisure and Recreation: Concepts and Theories Cr.Hrs.3  
(Formerly 123.701) Critical analysis of the dominant concepts, theories, and research associated with the development of basic and applied knowledge in recreation and leisure studies. Prerequisite: instructor's permission.

**REC 7060** Issues in Tourism Cr.Hrs.3  
(Formerly 123.706) Contemporary issues and research related to travel behaviour and sustainable tourism. Prerequisite: instructor's permission.

**REC 7090** Special Topics in Recreation and Leisure Studies Cr.Hrs.3  
(Formerly 123.709) Contemporary research and theory in selected areas of recreation and leisure studies, the topics addressed in this course will vary depending on faculty expertise and student need. Prerequisite: instructor's permission.

## Landscape Architecture

**Head:** (and Graduate Chair) A. Tate

**Campus Address/General Office:** 201 Russell Building

**Telephone:** (204) 474 9458

**Fax:** (204) 474 7532

**Email Address:** [landscapearch@umanitoba.ca](mailto:landscapearch@umanitoba.ca)

**Website:** <http://umanitoba.ca/landscapearchitecture>

**Academic Staff:** Please refer to the website for Faculty information: <http://umanitoba.ca/landscapearchitecture>

The program leading to the Master of Landscape Architecture degree at the University of Manitoba was the first graduate program in Canada. Approximately 55-65 full-time students are enrolled in the program, representing all regions of Canada and other countries of the world.

The MLA program is accredited by the Canadian Society of Landscape Architects (CSLA) which has reciprocal recognition from the Landscape Architecture Accreditation Board (LAAB) in the United States. Successful completion of a program accredited by the CSLA/LAAB qualifies graduates to sit the North America-wide Landscape Architecture Registration Exam (LARE), the North America-wide qualification for professional registration. In Manitoba, having an accredited degree plus two years in practice and passing Section A of the LARE is required for professional registration with the Manitoba Association of Landscape Architects (MALA).

Students admitted to the program must have one of three different types of degree with a minimum Grade Point Average (or equivalent) of 3.0 from a university recognized by the Faculty of Graduate Studies:

- a degree in Landscape Architecture from a university recognized by the Faculty of Graduate Studies or a degree in Environmental Design from the University of Manitoba;
- a degree in another design discipline from a university recognized by the Faculty of Graduate Studies;
- a degree in another discipline from a university recognized by the Faculty of Graduate Studies

Study is directed towards the analysis, planning and design of exterior spaces, both urban and rural. The program emphasizes the development and testing of physical forms intended to positively affect the quality of the designed environment; forms which are responsive to societal needs, while remaining expressive of the physiographic conditions associated with specific geographic locations.

The general objectives of the program are:

- the articulation of a theoretical basis for the design of the built environment
- the development of a practical design methodology
- the exploration of societal, technical and natural processes as form determinants
- regional resources analysis and activity allocation
- the investigation of issues associated with landscape architectural practice.

The department attempts to provide a sense of need and purpose for each student, through the investigation of contemporary urban and rural environmental problems from micro to regional scales.

## Fields of Research



Faculty in the Department have a variety of research interests including:

- urban design
- landscape aesthetics
- ecological design
- design philosophy
- cultural theory and design
- public urban space
- urban typology
- design education
- landscape memorials
- landscape urbanism
- regional planning and design
- landscape art
- community design
- prairie landscapes
- landscape perception

#### Research Facilities

The Faculty of Architecture has an excellent library, a slide library, a products catalogue library, a workshop, and a comprehensive CADLAB. The Department uses the Star Lake Field Stations for field ecology work.

Master of Landscape Architecture (M.Land.Arch.),  
**Admission**

Candidates for a Master degree in Landscape Architecture must possess a degree from a recognized degree granting university.

See the department of Landscape Architecture website for additional application requirements.

#### Application Deadlines

The application deadline for September start is December 1 for all International applicants and January 15 for all Canadian/US applicants.

Applications received after January 15 will be considered if places are still available, but early application is strongly recommended.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar.

Degree Requirements: 42-111 credit hours

Second language reading requirement: none

Expected time to graduation: 3 years full-time study.

Graduate Studies

#### Landscape Architecture -6000 Level

**LARC 6150** Landscape Architecture

Communication Cr.Hrs.3

(Formerly 031.615) The objectives of this course are to promote an awareness of the diversity of graphic expression and to encourage experimentation. Students are given the opportunity to practice drawing and graphic communication skills and techniques through studio exercises.

#### Landscape Architecture -7000 Level

**LARC 7002** Land Construction and Professional

Practice Cr.Hrs.3

Introduction, investigation and fundamental exercises in landscape design and construction documentation, and construction administration for landscape construction projects.

**LARC 7020** Field Studies Cr.Hrs.3

A one- or two-week field study block course at the start of winter term or during mid-term break, co-requisite with winter term studios.

**LARC 7040** Design Research Cr.Hrs.3

The focus is on critical review of the literature, the formulation of research methods appropriate to securing, analyzing, and interpreting of research in Landscape Architecture, and the examination of approaches to design as a mode of enquiry and research.

**LARC 7110** Landscape Architecture Studio 1 Cr.Hrs.9

An introductory study of structure and order within nature and the built environment. Instruction in the principles of design, the basic elements of graphic and spatial composition, and the vocabulary and methods of approach to landscape architectural design within a variety of contexts.

**LARC 7120** Special Topics in Landscape Architecture Cr.Hrs.3

(Formerly 031.712) An assignment and conference course. A detailed study of some special topics in landscape architecture, including environmental sustainability, urban landscape technology, and housing form.

**LARC 7160** Landscape Architectural Field Ecology Cr.Hrs.3

(Formerly 031.716) Field study of plant taxonomy and ecology. Approximately two weeks duration immediately prior to the beginning of fall term. For Landscape Architecture students or with consent of department head.

**LARC 7222** Landscape Architecture Studio 2 Cr.Hrs.9

An exploration of analytical, conceptual, and developmental aspects of urban public places in an experimental studio setting. An emphasis is placed on design as mediation between competing demands. The studio incorporates the application of three-dimensional simulation technologies in design.

**LARC 7250** Landscape Architecture Theory Cr.Hrs.3

(Formerly 031.725) Investigation of the theoretical foundations of landscape architecture in order to understand the complex nature of its practice, to identify its disciplinary boundaries, understand its multidisciplinary nature and to



investigate assumptions and myths that permeate its limited discourse.

**LARC 7300 Landscape Topics Cr.Hrs.3**

A critical examination of an individual topical study of relevance to contemporary landscape architecture. This course will lead to the completion of a practicum or thesis proposal.

**LARC 7310 Landscape Design Seminar 1 Cr.Hrs.3**

A cross-cultural overview of significant discourses with an emphasis on the influence of critical design inquiry upon specific landscape interventions.

**LARC 7320 Landscape Design Seminar 2 Cr.Hrs.3**

An examination of the means by which ideas are expressed in and through design with a focus on modes of communication, representation and engagement.

**LARC 7330 Landscape Architecture Studio 3 Cr.Hrs.9**

The study of design application of highly complex problem domains of the urban, suburban, townsite, or rural landscape.

**LARC 7340 Landscape Architecture Studio 4 Cr.Hrs.9**

Comprehensive design studio involving transition between larger scale planning/design proposals for an urban/regional area and site design; includes principles of spatial modeling.

## Law

**Dean:** Turnbull, Lorna A. B.A., (Queen's), LL.B. (Ottawa), LL.M. and J.S.D. (Columbia).

**Associate Dean(s):** Associate Dean (LL.B. Program):

Fainstein, Lisa, B.A., (Manitoba), LL.B. (Manitoba).

Associate Dean (Research and Graduate Studies): Schulz, J.L., B.A. (Gold Medal) and LL.B. (Manitoba), M.Phil. (Cambridge), S.J.D. (Toronto).

**Campus Address/General Office:** Robson Hall

**Telephone:** (204) 474 6130

**Fax:** (204) 474 7580

**Email Address:** [lawgrad@ms.umanitoba.ca](mailto:lawgrad@ms.umanitoba.ca)

**Website:** <http://law.robsonhall.ca/llm>

The Faculty offers a structured and personal LL.M. experience designed for successful completion within one calendar year, beginning in September. In addition to course work, the student must complete a thesis of 90 to 120 pages. Each student is assigned a faculty advisor with expertise in the chosen area of study, who will direct thesis research and design and assist the student in course selection. Each student is also assigned an external reader who will review and evaluate the thesis. Early and regular contact with the advisor is advised.

In the first term, the student will complete a required seminar course entitled Graduate Legal Research and Theory. The seminar's focus on various theoretical approaches to legal scholarship and alternative approaches to legal study, legal research, and writing is designed to assist the student in approaching the thesis work, provide unity to the program, and facilitate the collegial exchange of ideas. In addition to

the graduate seminar course, the student will successfully complete a minimum of two courses, to be taken in either term, and selected with the approval of the advisor. One course may be taken in a faculty other than Law. The student will also take part in academic seminars and functions.

The Master of Laws degree enhances career prospects. This is evidenced by the fact that our international and Canadian graduates have secured positions in academia, international corporations, legal practice, and highly competitive doctoral programs.

### Fields of Research

The Faculty of Law has many research interests and strengths. In addition to basic areas of common law — property, contract, tort, criminal, constitutional, evidence, administrative, tax, and family — faculty expertise includes Aboriginal law, ADR, administrative law, Charter, children and the law, corporate/commercial, legal history, human rights, intellectual property, international law, international trade, law and literature, law and film, money laundering, and prisoners' rights. The Faculty is home to the Asper Chair in International Business and Trade Law; the Marcel A. Desautels Centre for Private Enterprise and the Law; and the Centre for Human Rights Research.

### Research Facilities

The E.K. Williams Law Library offers full time support and facilities for research, including state-of-the-art computer access. Graduate students have their own dedicated graduate research room, with individual desks, storage, and a private lounge. (International students should bring with them country-specific materials including statutes, codes, judgments and reference books needed for their thesis research).

Winnipeg is home to archival collections of materials relevant to legal studies. Collections include the Provincial Archives of Manitoba and its Government Records Centre, the Manitoba Legal-Judicial Archives, and the Legislative Library. The Provincial Archives house the Hudson's Bay Company Archive, which contains millions of mainly pre-1900 documents. This is a unique and important resource for law and society studies related to the fur trade, the Hudson's Bay Company, First Nations, Métis and Inuit cultures, and Canadian and English legal history.

### Master of Laws (LL.M.) , Admission

In addition to the requirements of the Faculty of Graduate Studies set out in the Graduate Studies Regulations Section of this Calendar, candidates must show that they are equipped intellectually to engage in advanced legal study and research. The Faculty of Law anticipates that the prospective LL.M. student will have earned the LL.B. or equivalent degree in law with a first or high upper second (B+) standing. Applicants ordinarily hold a common law or Canadian civil law degree but applications from those whose



legal education has been in another legal system will be given full consideration.

Please see our website: <http://law.robsonhall.ca/llm> or contact the Faculty of Law at: [lawgrad@ms.umanitoba.ca](mailto:lawgrad@ms.umanitoba.ca) for additional information and application procedures.

Applicants from non-English speaking countries must have an English language proficiency of 600-plus TOEFL score (paper based) and may be required by the Faculty of Law to demonstrate proficiency based on other tests accepted by the Faculty of Graduate Studies. Some international students have arrived six to twelve months in advance of applying for admission to the LL.M. program in order to enrol in English as a Second Language courses at the University of Manitoba.

The Faculty of Law offers the Dickson, Freedman, Kristjansson, Sgayas, Asper, and Desautels Graduate Fellowships. In partnership with the Faculty of Graduate Studies, the Faculty of Law may make additional awards. Applicants may wish to research other educational funding opportunities including support from the legal profession and awards, scholarships, and bursaries available from or tenable at the University of Manitoba. Canadian embassies offer basic information services and should be contacted early. Similarly, visa applications should be made early. Criteria for admission, awards and fellowships are found on the Graduate Studies and Law web sites.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students must attend the university full-time for a minimum of one academic year (normally September to May). Students are expected to complete the LL.M. program in one calendar year (normally, September to August for October convocation), although two years is permitted. Students must complete a satisfactory thesis on a subject approved by the advisor, to be submitted not later than eight weeks before the anticipated date of graduation. The student must successfully complete two courses in addition to the graduate Legal Research and Theory course. Courses will be chosen in consultation with the advisor.

### Subjects of Graduate Study

A candidate's subject of study shall be approved by the Graduate Studies Committee of the Faculty of Law. Thesis design, refinement and research will be supervised by a member of the Law Faculty/the student's advisor.

Second language reading requirement: none

Expected time to graduate: one year, although two years is permitted.

### Ph.D./S.J.D. in Law,

The Faculty of Law does not offer a Ph.D./S.J.D. Program.

Graduate Studies

### Law

**LAW 7110** Graduate Legal Research and Theory Cr.Hrs.2 (Formerly 045.711) Begins with visits to the Law Library and to the Provincial Archives of Manitoba, Government Records Centre, then epistemological problems are studied to define each student's research questions for the thesis; and thereafter weekly seminars explore doctrinal, interdisciplinary, comparative, and theoretical research perspectives (natural law to legal positivism, critical legal studies and post-modernism).

### Linguistics

**Head:** Terry Janzen

**Campus Address/General Office:** 534 Fletcher Argue Building

**Telephone:** (204) 474 9596

**Fax:** (204) 474 7671

**Email Address:** [lingdpt@cc.umanitoba.ca](mailto:lingdpt@cc.umanitoba.ca)

**Website:** <http://umanitoba.ca/linguistics>

**Academic Staff:** Please refer to our website for academic staff information: <http://umanitoba.ca/linguistics>

The Department of Linguistics offers individualized and flexible graduate programs leading to both the Master of Arts and the Doctor of Philosophy degrees. For students who want to pursue in-depth and especially field-based research on language, the University of Manitoba, which is situated in a linguistically diverse region, is an ideal location. The research programs of most past and current graduate students in the department involve original fieldwork, either with the local indigenous languages or in such places as China and the South Pacific.

### Fields of Research

The department has research strengths in both formal and functional/typological approaches to the core areas of linguistics (phonetics, phonology, morphology, and syntax), as well as historical linguistics, language planning and policy, text-based analysis and computational linguistics. The department's research draws on a wide range of languages, such as Hebrew, Persian, Taya and American Sign Language, and the department is also a world centre for the study of the Algonquian family of languages. In addition to journal articles and monographs, department members produce reference grammars, dictionaries, and text collections for local languages.

### Research Facilities

In addition to professional audio recorders (analogue, DAT and solid-state) available for fieldwork, the department maintains the Experimental Linguistics Laboratory, which features an anechoic audio recording chamber, professional audio and video recording equipment, and workstations for editing and analysis of recorded data.

### M.A. in Linguistics,



## Admission

Admission requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The M.A. program in linguistics is strongly research-oriented; admission decisions are, therefore, based only in part on the applicant's academic record; the department's resources and interests also play an important role. A four-year B.A. in linguistics is the normal preparation for the M.A. program. Students without such preparation may be required to complete the pre-Master's year first. The department has additional application procedures beyond those of the Faculty of Graduate Studies. Contact the Linguistics department for information.

## Application Deadlines

The M.A. program in linguistics starts September 1. Other start dates are possible only under exceptional circumstances. The deadline for applications to be received in the Faculty of Graduate Studies from International students is February 15. For Canadian/U.S. students, applications should be submitted to the Faculty of Graduate Studies by March 15th.

## Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The Master of Arts program in Linguistics requires 18 credit hours of coursework at the graduate level, including Field Methods (LING 7590), Phonology (LING 7550), and Syntax (LING 7630). The remaining courses (6 credit hours) may be taken in either linguistics or related disciplines, subject to approval by the department's graduate committee. In certain cases the graduate committee may require the student to take additional courses. Students are encouraged to complete their coursework by the end of the first year of the program. M.A. candidates must demonstrate proficiency in a second language. In addition to coursework and the language reading requirement, students must complete and successfully defend a thesis.

Second Language Reading Requirement: Yes

Expected time to Graduation: Two years

## Ph.D. in Linguistics, Admission

Admission requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The Ph.D. program in linguistics is strongly research-oriented; admission decisions are, therefore, based only in part on the applicant's academic record; the department's resources and interests also play an important role. Students with a Master's degree in linguistics from the University of Manitoba or with an equivalent degree from elsewhere may be admitted into the Ph.D. program. Students who have a Master's degree but lack the specific

course background for admission to the Ph.D. program may be admitted into the M.A. program. After completion of the M.A. course requirements with an average of B+ such students may apply to transfer directly to the Ph.D. program without completing the M.A. The department has additional application procedures beyond those of the Faculty of Graduate Studies. Contact the Linguistics department for further information.

## Application Deadlines

The Ph.D. program in linguistics starts September 1. Other start dates are possible only under exceptional circumstances. The deadline for applications to be received in the Faculty of Graduate Studies from International students is February 15. For Canadian/U.S. students, applications should be submitted to the Faculty of Graduate Studies by March 15th.

## Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Ph.D. students will normally complete 18 credit hours coursework at the graduate level. Courses are to be chosen in consultation with the advisor and students are encouraged to complete them by the end of the first year of the program.

## Candidacy Exams

Candidacy Exams are normally written in the second year of the Program. These exams consist of two original research papers of publishable quality in distinct areas of linguistics. Students must pass an oral exam based on each of the two papers.

Ph.D. candidates must demonstrate proficiency in a second language. This will at the same time satisfy the language reading requirement of the Faculty of Graduate Studies. Students who have satisfied this requirement at the M.A. level will be deemed to have met this requirement at the Ph.D. level.

Students must complete and successfully defend a dissertation. In preparation for this step, a written dissertation proposal must be presented and defended orally, normally in the third year.

Second language requirement: yes

Expected time to graduation: four years

## Linguistics

**LING 7500** Linguistic Variation and Change Cr.Hrs.3 (Formerly 126.750) Focuses on sources, causes and patterns of linguistic change, spread of changes and the



resulting relationships among languages.

**LING 7510** Linguistic Typology Cr.Hrs.3  
(Formerly 126.751) Highlights universals and differences in phonological, morphological and/or syntactic structures drawn from data from a wide variety of languages.

**LING 7550** Phonology Cr.Hrs.3  
(Formerly 126.755) Presents a theoretical approach to current issues in phonological analysis, building and testing hypotheses about phonological data.

**LING 7570** Semantic Theory Cr.Hrs.3  
(Formerly 126.757) A theoretical approach to current issues in semantics focusing on formal and logical aspects of meaning.

**LING 7580** Computational Linguistics Cr.Hrs.3  
(Formerly 126.758) Computational modelling of language and the use of computational tools in linguistic research.

**LING 7590** Field Methods Cr.Hrs.6  
(Formerly 126.759) Provides practical experience in techniques for data collection, analysis and interpretation of original data, through guided work with a speaker of a language unfamiliar to students. As the course content will vary from year to year, students may take this course more than once for credit.

**LING 7620** Seminar in North American Indian Languages Cr.Hrs.3  
(Formerly 126.762) The linguistic structure of a North American language or group of languages. As the course content will vary from year to year, students may take this course more than once for credit.

**LING 7630** Syntax Cr.Hrs.3  
(Formerly 126.763) Presents a theoretical approach to current issues in syntactic analysis, building and testing hypotheses about syntactic data.

**LING 7920** Special Problems in Linguistic Research Cr.Hrs.3  
(Formerly 126.792) Specialized topics in linguistics. As the course content will vary from year to year, students may take this course more than once for credit.

**LING 7940** Graduate Reading and Research 1 Cr.Hrs.3  
(Formerly 126.794) Independent reading and/or research on a selected topic. As the course content will vary from year to year, students may take this course more than once for credit.

**LING 7950** Graduate Reading and Research 2 Cr.Hrs.3  
(Formerly 126.795) Independent reading and/or research on a selected topic. As the course content will vary from year to year, students may take this course more than once for credit.

## Management/Business Administration

I.H. Asper School of Business

**Dean:** Dr. M. Benarroch

**Associate Dean(s):** Dr. D. Stangeland Dr. N. Turner

**Head:** M. Elliott, MBA Program, and N. Turner, Graduate Chair

**Campus Address/General Office:** 324 Drake Centre

**Telephone:** (204) 474 8448

**Fax:** (204) 474 7544

**Email Address:** [aspermba@umanitoba.ca](mailto:aspermba@umanitoba.ca) or [asper\\_PhD\\_MSc@umanitoba.ca](mailto:asper_PhD_MSc@umanitoba.ca)

**Website:** <http://umanitoba.ca/asper>

**Academic Staff:** Please refer to our website for academic staff information: <http://umanitoba.ca/asper>

The University of Manitoba's Asper School of Business offers three graduate degrees for those interested in furthering their business and management understandings and skills. The AACSB accredited programs are:

- **Asper MBA;**
- **M.Sc. in Management;** and
- **Ph.D. in Management.**

The Asper MBA is a tightly integrated 60 credit hour program, led by internationally-recognized academics and professionals, and conducted in an interactive and dynamic face-to-face learning environment. The core of the program provides a common business leadership and managerial base for all students. Beyond the core exists a host of management electives and concentrations for individuals to choose from. All core courses are required, unless exemption, advance standing, transfer or course substitution is granted. The program can be taken either full- or part-time.

The M.Sc. Program in Management is designed to produce graduates who have an academically more in-depth, rigorous training in their chosen management field than is normally the case either for the B.Comm (Hons.) graduates or MBA graduates. In addition, the program seeks to develop strong research skills for the graduates in order to meet the needs of employers as well as to more effectively prepare Master's students for doctoral work within various areas of concentration in the departments of supply chain management, marketing, and business administration.

The Ph.D. Program in Management is designed to prepare individuals for teaching and research careers in universities, or for applied research positions in either the private or public sector. The program is based upon the premise that contemporary managerial problems are typically multi-faceted and need to be examined from a perspective that is not restricted by the boundaries of any single discipline. The inter-disciplinary nature of the program extends beyond the Asper School of Business to related disciplines across the University of Manitoba. Areas of concentration include: finance, marketing, organizational behaviour, organizational theory, human resource management, strategy and entrepreneurship.

### Fields of Research



The Asper School of Business is one of the best equipped management schools in Canada for research in managerial issues of national and international interest.

Researchers in business administration are examining a wide range of issues including organizational change and conflict management, job stress, work role socialization, compensation structures, goal setting, employment equity and discrimination.

Researchers in marketing and entrepreneurship are studying issues of national loyalty in international air travel, the role of affect in consumer behaviour, the effect of body image portrayals on consumers, international marketing and country of origin issues, information processing and sales person behaviours, the nature of effective small firm niche strategies and a variety of social marketing issues, how the age of the consumer affects the impact of advertising, and the nature of effective small firm niche strategy.

In the accounting and finance area, research programs span issues in accounting standards, asset pricing, national, and international capital markets and international corporate finance.

In the supply chain management area, researchers are examining issues such as efficiency of transportation and logistics, production and operations.

#### Research Facilities

The Asper School of Business occupies the Drake Centre for Management Studies. The centre houses case rooms, lecture theatres, computer laboratories, a graduate study area, and research space.

The Albert D. Cohen Management Library holds approximately 40,000 volumes and subscribes to some 3000 current online and print periodicals. It maintains an annual report collection, specialized trade directories, and financial investment services. The Library subscribes to the major online services including ProQuest, Business Source Premier, Canadian Business and Current Affairs Complete, JSTOR, Mergent, Emerald, the Economist Intelligence Unit, and FinancialPost.infomart.ca. In addition, as a unit of the University of Manitoba Libraries, management students have access to some 200 additional online database services.

Academic and applied research is conducted in the Transport Institute, the Stu Clark Centre for Entrepreneurship, and the Centre for Accounting Research and Education which subscribes to the following databases: S & P Compustat, CRSP, TSX CMFRC, and NYSE TAQ.

#### ASPER MBA

The Asper MBA gives tomorrow's business leaders the skills and expertise they need to succeed in a competitive global market. Our accredited program challenges students to view business management from diverse perspectives and to become exceptional problem solvers, critical thinkers and decision-makers.

As part of your leadership development, you take courses in:

- **Executive Leadership**—9 credit hours exploring the challenges, responsibilities and realities of leading an enterprise.
- **Business Management Essentials**—39 credit hours of general management and business study in marketing, accounting, finance, human resources and supply chain management.
- **Advanced Concentrations**—12 credit hours of elective study in a selected concentration. Sharpen your expertise in finance, management, accounting, marketing, human resource management, supply chain management, business-government relations and health administration.

The Asper MBA is designed to fit your life. Complete the program in as little as one year or take up to six years to finish your studies part-time. We offer courses once or twice per year and schedule them to maximize convenience for you.

Program entry occurs twice annually, in mid-August and January (although an 11-month program completion is not normally possible with a January commencement). The academic year is composed of three terms: fall (August-December), winter (January-March), and summer (April-July).

If you recently completed university-level business or management courses in another 4-year university degree program, or have certain professional designations, you may qualify for up to 30 credit hours of exemptions, significantly reducing your program length and cost.

#### Admission

To ensure we build the strongest community possible, we make our admission decisions carefully. Admission to our program is highly competitive; most applicants exceed the minimum requirements.

The Asper MBA admission criteria are:

- **Previous Academic Achievement**—a minimum of a baccalaureate degree or its equivalent from an accredited university, having attained in the most recent 60 credit hours of university-level work, a competitive grade point average (our average at admission is 3.4 on a 4.5 grading scale, or approximately equivalent to a "B+" or 75%). That said, the program is annually permitted to admit a small number of highly experienced and gifted individuals who do not hold the required baccalaureate, but who have demonstrated both the potential for leadership and an ability to meet the academic demands of an MBA. Such individuals must have meaningful work experience, outstanding performance in an alternate program of study such as a professional designation or certificate program, and have a strong GMAT score;



- **Professional & Leadership Experience**—a minimum of three years of work experience is preferred, preferably in a professional or managerial role;
- **Graduate Study Readiness**—a competitive score on the Graduate Management Admissions Test (our average is 580) or a GRE. For further GMAT details, please visit [www.mba.com](http://www.mba.com); and, for students whose first language is not English,
- **English Language Proficiency**—a minimum score of 80 (internet-based) or 550 (paper-based) on the TOEFL, or comparable CanTEST, AEPUCE, IELTS, MELAB results.

One can apply at anytime through the year, and completed applications will be reviewed at a monthly admission meeting by the Asper MBA Admissions Committee. However, deadlines do exist for August and January program commencement purposes, and applications received after the deadline dates will be considered for the following entry gate:

- **For August start**—January 15th for International applicants and May 1st for North American/Permanent Resident applicants; and
- **For January start**—June 15th for International applicants and October 1st for North American/Permanent Resident applicants.

#### Admission Deadline

#### Program Requirements

The Asper MBA's 48 credit hours of mandatory courses are:

#### Required Core Courses

Course Title	Credit Hours
ACC 6050 Accounting 1*	3
ACC 6060 Accounting 2*	3
FIN 6072 Corporate Finance*	3
MIS 6150 Management of Information Systems & Technology*	3
GMGT 6030 Organization Theory and Behaviour*	3
GMGT 7010 Business Policy Seminar**	3
GMGT 7080 Research Methods	3
HRIR 7450 Industrial Relations/Human Resource Management*	3
IDM 7510 Strategic Leadership and Managing Change	1.5
GMGT 7710 Managerial Communications	1.5
IDM 7720 Business Conditions Analysis	1.5
INTB 7730 International Business*	1.5
GMGT 7740 Business/Government Relations*	1.5
IDM 7060 Professional Seminar	6
MKT 6080 Marketing*	3
ENTR 7240 Entrepreneurship and New Venture Formation*	1.5
MSCI 5010 Mathematics for Management***	3 Aux
MSCI 6070 Quantitative Analysis for Management*	3
OPM 6090 Production Management*	3
<b>Total</b>	<b>48 (plus 3 Aux)</b>

#### NOTES:

\* Eligible for exemption.

\*\* GMGT 7010 Business Policy Seminar constitutes the comprehensive examination. The course must be completed at the University of Manitoba normally in the final term (last 15 credit hours) of a student's program.

\*\*\*GMGT 5010 is an auxiliary or additional course required for those who don't have the requisite level of mathematical background at program start. Please contact Asper MBA office for details.

#### Elective Courses

In addition to the mandatory leadership and business courses, students are required to take 12 credit hours of graduate-level coursework from the I.H. Asper School of Business or, where approved, from other Faculties. Students will be able to choose a General Management option — completion of any 12 hours of MBA program electives in different areas — or to undertake an Individual Interdisciplinary concentration consisting of graduate courses in another faculty (with a management focus). As well, students can choose to concentrate all 12 credit hours of electives in a focused area.

These concentrations are currently offered in:

Finance

Marketing

Human Resource Management and Organizational Behaviour

Supply Chain Management



Business Government Relations (with some courses from the MPA program)

Health Administration (through select courses at the Faculty of Medicine)

Management Accounting (partnership with CMA Manitoba)

Courses required for each area of concentration are listed below (please note that not all electives are available each year):

**Finance**

**Four courses from:**

FIN 7070	Theory of Financial Management	3
FIN 7080	International Finance	3
FIN 7152	Investment Policy	3
FIN 7220	Advanced Seminar in Finance	3
FIN 7232	Seminar in Financial Intermediaries and Capital Markets	3
FIN 7260	Selected Topics in Finance	3
FIN 7240	Readings in Accounting and Finance	3

**Management Accounting**

In partnership with CMA Manitoba, a student can earn a "Management Accounting" concentration on successful completion of CMA's **Accelerated Program and CMA's National Entrance Exam.** 12

The Accelerated Program is a ten month intermediate and advanced accounting program that is offered annually by CMA Manitoba. For details, please contact the Asper MBA Office.

**Marketing**

**Four courses from:**

MKT 7080	Selected Topics in Marketing	3
MKT 7200	Decisions and Concepts in Marketing	3
MKT 7210	Marketing and Competitive Behaviour	3
MKT 7220	Seminar in Marketing	3
MKT 7230	Seminar in Consumer Behaviour	3
MKT 7100	Readings in Marketing	3
MKT 7300	International Marketing	3

**Human Resource Management and Organizational Behaviour**

**Two of the following are required:**

HRIR 7162	Staffing	3
HRIR 7164	Training and Development	3
HRIR 7168	Management of Labour and Employee Relations	3
HRIR 7166	Compensation	3

**Plus two courses from:**

HRIR 7162	Staffing	3
HRIR 7164	Training and Development	3
HRIR 7168	Management of Labour and Employee Relations	3
HRIR 7166	Compensation	3
HRIR 7460	Collective Bargaining	3
GMGT 7090	Organizational Decision-Making	3
GMGT 7100	Interpersonal Processes	3
INTB 7032	Comparative Industrial Relations and Human Resource Management	3
INTB 7040	International Organizational Behaviour	3
GMGT 7350	Administration: Selected Topics	3

**Supply Chain Management**

Each of:

SCM 7010	Advanced Supply Chain Management (mandatory)	3
OPM 7300	Topics in Advanced Production and Operations Management (mandatory)	3



Plus two from:

GMGT 7370	Managing Innovation	3
IDM 7010	Industry Project	3

Other SCM or OPM  
electives

**Business Government Relations**

Each of:

POLS 7370	Seminar in Theory and Practice of Public Administration	6
MKT 7080	Business, Markets and Public Policy	3

Plus one of:

POLS 7300	Public Finance	3
POLS 7340	Canadian Government	3
POLS 7550	Contemporary Issues in Canadian Politics	3
POLS 7300	Directed Readings in Public Administration	3

**Health Administration**

Four courses from:

CHSC 7130	Methods in Health Services Research and Evaluation	3
CHSC 7290	Economic Evaluation of Health Care	3
CHSC 7300	Health Policy and Planning	3
CHSC 7310	Epidemiology of Health Care	3
CHSC 7320	Organization and Financing of the Canadian Health Care System*	3
CHSC 7510	Current Topics in Community Health	3
CHSC 7520	Principles of Epidemiology 1*	3
IDM 7010	Industry Project**	3

**NOTES:**

\* Required for Health Administration concentration.

\*\* Can be used as a 3 credit hour elective course for field placements in health care organizations upon approval of the MBA Program Committee. Placements and supervision of the placements will be the responsibility of the Department of Community Health Sciences.

Health Administration courses are scheduled by the Department of Community Health Sciences and may not fit within the normal MBA elective schedule.

**Readings/Research Option**

With the approval of the MBA Program Committee and the academic area involved, a student can choose to undertake an industry project or a readings course. The industry projects and readings courses count as three credit hours of elective coursework. A student is allowed up to two readings courses or one readings course and one industry project during the program. An industry or readings proposal must be submitted to a faculty supervisor and the MBA Program Committee for approval prior to registration for the course. Projects and reading courses can normally only be taken within the Asper School of Business, and normally cannot be counted towards a concentration.

No thesis option available

Second language reading requirement: none

Expected time to graduate: 1 - 6 years

The MBA program curriculum and concentrations are subject to change upon appropriate approval.

**Faculty Based M.Sc. in Management, Admission**

Students admitted to the M.Sc. in Management degree program will pursue a research-focused degree in one of the departments of Marketing, Business Administration or Supply Chain Management. In addition to satisfying the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, applicants must possess at least a 4-year honours (or equivalent) degree from a recognized university in either a) management/business with a major in the same area or a similar area to be pursued in the M.Sc. or b) a degree from another Faculty with a closely related major. Applicants must provide the following prior to admission:

- A statement of goals and interests;
- An official transcript of academic record with a minimum grade point average of 3.0 on a 4.5 scale (approximately 70% or a "B") in the last 60 credit hours;
- A score on a graduate aptitude test, preferably the GMAT, with a minimum score of 550 (GRE will be accepted with a mean percentile score across the three areas similar to the current acceptable percentile level of the GMAT);



- Three letters of recommendation two of which are from persons who know the candidate's academic ability.

### Admission Deadline

The deadline to apply is January 10 for International applicants and March 10 for North American/Permanent Resident applicants (for early consideration, all applicants are encouraged to apply by January 10). Applications received after the deadline date will be considered if space permits.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The basic program design assumes that students have completed an honours degree or its equivalent. Additional courses may be required subject to the discretion of the I.H. Asper School of Business Graduate Committee if it is deemed that the candidate's preparation is not sufficient in his/her area of specialization. The student's advisory committee will make recommendations regarding deficient background, and the final program will be approved by the Graduate Research Program Committee.

All students must complete the following course requirements:

A minimum of 18 credit hours plus a thesis/practicum. This minimum will include:

a) at least 6 credit hours of required graduate level courses in the student's area of specialization; b) up to 12 credit hours of optional courses (subject to the approval of the Graduate Committee); c) a thesis or a practicum.

### Business Administration (Industrial Relations/Human Resource Management/Management of Organizations/Organizational Behaviour) Option

One of: GMGT 7440 Organizational Theory or GMGT 7410 Organizational Behaviour

One of: GMGT 7540 or GMGT 7080 Research Methods, or an equivalent graduate level course in quantitative methods from another Faculty\*

Four additional optional courses but, among them, students are encouraged to take: 1) an additional research methods course (quantitative or qualitative) and either a statistics or econometrics course and 2) a philosophy of science course.\*

### Master's thesis or research practicum

\*Students are advised to check with the Graduate Program Office at the I.H. Asper School of Business for a list of suggested courses.

### Marketing Option

Any six credit hours from:

MKT 7100 Readings in Marketing

MKT 7110 Doctoral Seminar in Marketing

MKT 7120 Seminar in Buyer Behaviour or MKT 7230 Seminar in Consumer Behaviour

Six credit hours of approved research methods coursework at the graduate level.\*

Additional six credit hours of approved coursework relevant to the chosen area of study.

\*Students are advised to check with the Graduate Program Office at the I.H. Asper School of Business for a list of suggested courses.

### Supply Chain Management Option

Nine credit hours in:

SCM 7010 Advanced Supply Chain Management

GMGT 7080 Research Methods

OPM 6090 Production Management

Nine credit hours of additional courses relevant to the area of specialization.

Second language requirement: none

Expected time to graduate: 1-3 years

### Faculty Based Ph.D. in Management, Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, an earned Master's degree (MBA preferred), and in exceptional cases, a Bachelor's degree in a management or business discipline from a recognized institution, or a discipline sharing a common origin or a parallel discipline to the applicant's chosen area of concentration, is required.

Prior to admission, the candidate is to provide the following:

- A statement of goals and interests;
- An official transcript of academic record with a minimum grade point average of 3.0 on a 4.5



scale (3.5 preferred), (approximately 70% or a "B") in the last 60 credit hours;

- A score on a graduate aptitude test, preferably the GMAT, with a minimum score of 600 (GRE will be accepted with a mean percentile score across the three areas similar to the current acceptable percentile level of the GMAT );
- Three letters of recommendation from persons who know the candidate's academic ability;
- Evidence of research and teaching ability.

#### Admission Deadline

The deadline to apply is January 10 for all applicants.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The basic program design assumes that students have completed an MBA degree or its equivalent. The MBA degree constitutes the "core" of knowledge that is prerequisite to proceeding to Ph.D. study since it provides the breadth of knowledge necessary for Ph.D.'s in Management. Students who are deficient in this "core" may be required to take additional MBA-level courses. Decisions regarding deficient background will be made by the student's advisory committee, subject to the approval of the Graduate Research Program Committee.

All students must complete the following course requirements:

#### Area of Specialization Required Coursework:

##### Finance

FIN 7500	Financial Theory and Corporate Policy	3
FIN 7510	Finance 1: Capital Markets	3
FIN 7520	Finance 2: Corporate Finance	3
FIN 7530	Advanced Topics in Finance	

##### Marketing

MKT 7100	Readings in Marketing	3
MKT 7110	Doctoral Seminar in Marketing	3
	Plus a minimum of 6 hours within the Marketing area	

Organizational Behaviour or Organizational Theory/Strategy/ Human Resource Management/ Entrepreneurship

GMGT 7410	Doctoral Seminar in Organizational Behaviour	3
GMGT 7440	Doctoral Seminar in Organizational Theory	3

Plus a minimum of 6 hours within Business Administration area of concentration.

Second language requirement: none

Expected time to graduate: 4 - 5 years

#### Accounting and Finance -ACC 6000 Level

**ACC 6050** Accounting 1 Cr.Hrs.3  
(Formerly 009.605) Principles and concepts of accounting underlying the measurement of business income and evaluation of performance.

**ACC 6060** Accounting 2 Cr.Hrs.3  
(Formerly 009.606) The uses, limitation, and interpretation of

A minimum of 12 hours of study in the chosen area of specialization, as approved by the advisory committee. (See specific specialization requirements that follow).

#### Faculty-Based Doctoral Courses

PHDM 7110 Doctoral Seminar in Management (3)

PHDM 7120 Management Research Project I (3)

PHDM 7130 Management Research Project II (3)

#### Research Methods

A minimum of 6 hours of research methods courses, as approved by the advisory committee.

#### Support Area

A minimum of 9 hours of study in a chosen support area, as approved by the advisory committee. A minimum of 3 of these hours must be taken outside the Asper School of Business.

Minimum total Credit Hours: 36

**NOTE:** The student's advisory committee may require additional coursework.

financial statements; accounting details and reports used in planning, control, and decision-making. Prerequisite: ACC 6050 (or 009.605) or IDM 7720.

#### Accounting and Finance -FIN 6000 Level

**FIN 6072** Corporate Finance Cr.Hrs.3  
The financial management of businesses including agency



problems, valuation, capital budgeting, risk/return relationships, the term structure of interest rates, market efficiency, long-term financing, capital structure, and the use of options and futures for risk management. Not to be held with either of the former 009.607 or FIN 6070. Prerequisite: ACC 6050 9or 009.605) or IDM 7720.

### Accounting and Finance -MIS 6000 Level

**MIS 6150** Management of Information Systems and Technology Cr.Hrs.3  
(Formerly 009.615) This course covers the frameworks and concepts of managing information systems and knowledge management, decision support, electronic commerce, systems development, management information systems strategy and strategic information systems. Not to be held with 009.613 or 009.614

### Accounting and Finance -FIN 7000 Level

**FIN 7070** Theory of Financial Management Cr.Hrs.3  
(Formerly 009.707) Study of selected topics in the various fields of financial management; emphasis on trends, current problems, and research in the fields. Prerequisite: FIN 6072 (or FIN 6070 or 009.607).

**FIN 7080** International Finance Cr.Hrs.3  
(Formerly 009.708) The theory and practice of financial management in an international context. Includes foreign currency markets, exchange rates, measurement and management of foreign currency risk, international financing, and foreign direct investment. Prerequisite: FIN 6072 (or FIN 6070 or 009.607)

**FIN 7150** Investment Policy Cr.Hrs.3  
(Formerly 009.715) Topics will include the structure of rates in the financial markets, the problem of investment timing and selection, and principles of financial analysis. Prerequisite: FIN 6072 (or FIN 6070 or 009.607).

**FIN 7152** Investment Policy Cr.Hrs.3  
The theory and practice of investment management. Topics include: portfolio theory and management, market efficiency, options and futures. This course cannot be held with FIN 7150. Prerequisite: FIN 6072 (C+) [ or FIN 6070 (C+) or 009.607 (C+)].

**FIN 7220** Advanced Seminar in Finance Cr.Hrs.3  
(Formerly 009.722) A case-oriented course that will require extensive preparation and presentation of selected cases in corporate financial management; emphasis on the application of theoretical models of finance to real problems. Prerequisite: FIN 6072 (or FIN 6070 or 009.607) or consent of instructor.

**FIN 7230** Seminar in Financial Intermediaries and Capital Markets Cr.Hrs.3  
(Formerly 009.723) Topics will include the major participants in the capital markets and their functions; the demand and supply of money and the structure of interest rates; recent developments and international factors in the capital markets. Prerequisite: FIN 6072 (or FIN 6070 or 009.607).

**FIN 7232** Financial Intermediaries and Capital Markets Cr.Hrs.3

Topics include: the major participants in the capital markets and their functions, the demand and supply of money and the structure of interest rates, non money financial instruments, recent developments and international factors in the capital markets and capital market risk issues. This course cannot be held with FIN 7230. Prerequisite or concurrent requirement: FIN 6072 (C+) [or FIN 6070 (C+) or 009.607 (C+)].

**FIN 7240** Readings in Accounting and Finance Cr.Hrs.3  
(Formerly 009.724) Supervised readings in one of the areas of accounting and finance.

**FIN 7260** Selected Topics in Finance Cr.Hrs.3  
(Formerly 009.726) A study of selected topics in finance relating to advanced issues in theory or practice. Topics considered will depend on the interests and needs of the participants. Prerequisite: FIN 6072 (or FIN 6070 or 009.607) plus others if specified by the professor.

**FIN 7500** Financial Theory and Corporate Policy Cr.Hrs.3  
(Formerly 009.750) Explores the conceptual and theoretical foundations of finance and their applications to corporate financial policy. Prerequisite: admission to the Ph.D. program in Management (Finance) or approval by instructor.

**FIN 7510** Finance 1: Capital Markets (Ph.D) Cr.Hrs.3  
(Formerly 009.751) An understanding of the theory and empirical research in capital markets including theories and tests of financial asset valuation, portfolio analysis and market efficiency. Prerequisite: admission to the Ph.D. program in Management (Finance) or approval by instructor.

**FIN 7520** Finance 2: Corporate Finance (Ph.D) Cr.Hrs.3  
(Formerly 009.752) Theoretical issues in corporation finance. Issues covered will include investment choice and shareholder unanimity, capital structure, dividend irrelevancy, corporate and personal taxes, bankruptcy costs, agency cost, asymmetric information and signalling models, theory of the firm, and corporate takeovers. Prerequisite: admission to the Ph.D. program in Management (Finance) or approval by instructor.

**FIN 7530** Advanced Topics in Finance (Ph.D) Cr.Hrs.3  
(Formerly 009.753) Seminar emphasizing the mathematical tools necessary for financial decision making including an introduction to stochastic processes, stochastic dominance, and separation theorems. Applications in derivative markets, investment theory, and corporate finance. Prerequisite: admission to the Ph.D. program in Management (Finance) or approval by instructor.

### Accounting and Finance -IDM 7000 Level

**IDM 7010** Industry Project Cr.Hrs.3  
(Formerly 098.701) Supervised study and research of a problem opportunity in business or management. Specific course requirements determined by the faculty member assigned to be the course coordinator. In addition, each project will be supervised by a faculty member expert in the area. Projects consist of written report(s) containing substantive, practical evidence and analytically structured comments, academic materials, and bibliographical references. Pass/Fail basis only. Prerequisite: completion of all 600-level MBA courses (or equivalent experience) and



consent of MBA program director.

**IDM 7020** Managing for Sustainable Development Cr.Hrs.1.5 (Formerly 098.702) Strategic issues related to the manager's role in sustainable development, including enterprises in the renewable and non-renewable resource sectors, life-cycle analysis, and full cost accounting. Emphasis is placed on environmental management control systems, environmental performance measurement, reporting, and the impact of environmental management on strategic management decisions.

**IDM 7030** Social and Community Awareness Project Cr.Hrs.0 (Formerly 098.703) An experiential project examining issues related to economically and/or socially disadvantaged individuals and groups with emphasis on corporate social responsibility. This course is graded pass/fail.

**IDM 7040** Leadership and Personal Development Seminar Cr.Hrs.0 (Formerly 098.704) Preparation in computer, technical, interpersonal, and team-building skills for MBA MANITOBA program. This course is graded pass/fail.

**IDM 7050** International Study Trip Cr.Hrs.3 (Formerly 098.705) A supervised international experience to examine the relationship between corporations, senior managers, and social institutions in selected countries. Examination of the interplay between culture, economic development, management systems and strategies in other countries. Emphasis upon establishment of business networks on an international basis.

**IDM 7060** Professional Seminar Cr.Hrs.6 (Formerly 098.706) A series of modules on executive leadership and professional management topics.

**IDM 7070** Fundamental Professional & Leadership Seminar Cr.Hrs.1.5 (Formerly 098.707) Series of seminars covering fundamental topics essential for modern management including business ethics and managing diversity.

**IDM 7080** Professional and Leadership Seminar Cr.Hrs.1.5 (Formerly 098.708) Series of seminars covering fundamental topics essential for modern management including such topics as: aboriginal business, managerial law, situational leadership, creating shareholder value, developing a business plan, and career management.

**IDM 7510** Strategic Leadership and Managing Change Cr.Hrs.1.5 (Formerly 027.751) An examination of the role of the manager as a change agent and processes associated with strategic vision and change. Analysis of factors affecting strategic decisions and how organizations adapt to their environment. Emphasis is upon the role of leaders: transformational leadership, charisma, organizational design and managing organizational culture change.

**IDM 7720** Business Conditions Analysis Cr.Hrs.1.5 (Formerly 027.772) This course provides an awareness and understanding of key components of the economic and business environment. It explores critical forces that affect daily business decision-making including market supply and demand, the time value of money, and a firm's profitability

and valuation. As well, the course introduces the concept of financial reporting.

### Business Administration -GMGT 6000 Level

**GMGT 6030** Organization Theory and Behaviour Cr.Hrs.3 (Formerly 027.603) An examination of current theories of structure and behaviour as they apply to organizations in the public and private sector. Emphasis upon research findings and their application in management situations.

### Business Administration -GMGT 7000 Level

**GMGT 7010** Business Policy Seminar Cr.Hrs.3 This course entails the study of general management. Students shall integrate the concepts from the various functional areas of the organization covered in the program with the different environments: social, political, economic and technological. Students will analyze general management problems, shall formulate policies, and display ability to implement policies. Must be taken in final term in the program.

**GMGT 7060** Readings in Business Administration Cr.Hrs.3 (Formerly 027.706) Supervised readings in one of the areas of business administration including human resource management, industrial relations, organizational behaviour, policy and environment.

**GMGT 7070** Administrative Studies Research Project Cr.Hrs.6 (Formerly 027.707) Research in any one of the areas of administrative studies.

**GMGT 7080** Research Methods Cr.Hrs.3 (Formerly 027.708) Principles of research design and data collection with examples drawn across the areas of marketing management, industrial relations, policy analysis, etc. Both cases and computer-based exercises are used. Prerequisite: MSCI 5010 (or 164.501 or 027.501).

**GMGT 7090** Organizational Decision-Making Cr.Hrs.3 (Formerly 027.709) A study of the goal-setting and decision-making processes in organizations and the implications for the growth and survival of such organizations.

**GMGT 7100** Interpersonal Processes Cr.Hrs.3 (Formerly 027.710) An examination of theories of interpersonal behaviour and processes as they apply to managerial situations. Emphasis upon individual behaviour and change, group dynamics, leadership behaviour, and communications.

**GMGT 7110** Business and Its Environment Cr.Hrs.3 (Formerly 027.711) Analysis of the environmental factors within which a business operates.

**GMGT 7120** Organizational Power and Politics Cr.Hrs.3 (Formerly 027.712) An examination of personal, interpersonal and organizational power in the context of organizational politics. Topics covered include rational versus political models of organizations, the accumulation and management of personal power, the politics of decision-making, the politics of managerial succession, the politics of budgets, authority, intergroup conflict, and bargaining and



negotiation processes.

**GMGT 7350** Administration: Selected Topics Cr.Hrs.3  
(Formerly 027.735) Topics in one of the areas of business administration including human resource management, industrial relations, organizational theory and behaviour, and business policy and strategic management.

**GMGT 7360** Organizational Behaviour and Self Development Cr.Hrs.3  
(Formerly 027.736) This course will operate in a seminar format with two goals. The first goal is to provide an environment in which the student can develop and manage to successful conclusion a project in which they have significant intrinsic interest. The second goal is to improve the student's understanding of the inner life of an organization by increasing his/her ability to discriminate between the organizational "ropes to skip and the ropes to know."

**GMGT 7370** Managing Innovation Cr.Hrs.3  
(Formerly 027.737) An examination of organizational design characteristics in the context of a competitive international perspective. Emphasis is on organizational and technological innovation to facilitate the development of new products or processes or to implement change in existing products or processes. Topics covered include Canadian experience and policy, facilitators and inhibitors in the creative process, diffusion of innovations, and the aims of the patent process.

**GMGT 7400** Readings in Organizational Behaviour (Ph.D.) Cr.Hrs.3  
(Formerly 027.740) An examination of theory and research from the social and administrative sciences that focuses on the interaction between organizations and their environments. The evaluation and synthesis of theoretical and empirical work in this area will be emphasized. Prerequisite: admission to the Ph.D. program in Management (Organizational Behaviour) or approval by instructor.

**GMGT 7410** Doctoral Seminar in Organizational Behaviour (Ph.D.) Cr.Hrs.3  
(Formerly 027.741) An examination of theory and research from the social and administrative sciences that is relevant to the behaviour of individuals and groups within organizations. Emphasis will be placed on evaluation and synthesis of theoretical and empirical work in this area. Prerequisite: admission to the Ph.D. program in Management (Organizational Behaviour) or approval by instructor.

**GMGT 7440** Doctoral Seminar in Organizational Theory (Ph.D.) Cr.Hrs.3  
(Formerly 027.744) The major goal of this course is to familiarize students with central schools of thought within organization theory. As with other theories in the social sciences, these schools of thought tend to be based on differing assumptions about the nature of the organizational world, the operation of causality, epistemology, and the role of human actors. Prerequisite: admission to the Ph.D. program in Management (Organizational Behaviour) or approval by instructor.

**GMGT 7510** Strategic Leadership and Managing Change Cr.Hrs.1.5  
(Formerly 027.751) An examination of the role of the

manager as a change agent and processes associated with strategic vision and change. Analysis of factors affecting strategic decisions and how organizations adapt to their environment. Emphasis is upon the role of leaders: transformational leadership, charisma, organizational design and managing organizational culture change.

**GMGT 7520** Issues in Managerial Communication Cr.Hrs.3  
(Formerly 027.752) An examination of strategies and development of skills for effective oral, written, non-verbal, interpersonal, group, cross-cultural, and ethical communication in management.

**GMGT 7530** Selected Topics Cr.Hrs.3  
(Formerly 027.753) An examination of current issues in areas which could, for example, include: organizational behaviour, organizational theory, strategy, human resource management, and industrial relations. Prerequisite: consent of instructor.

**GMGT 7540** Doctoral Seminar in Research Methods (Ph.D.) Cr.Hrs.3  
(Formerly 027.754) Principles of research design and data collection appropriate for the areas of marketing, management, industrial relations, policy analysis, finance, management science, etc. Research problems and issues will be discussed from a number of perspectives. Conceptual material, statistical analyses, theoretical material and the utilization of statistical application software are used as the bases for seminar discussion. Prerequisite: admission to the Ph.D. program in Management or approval by instructor.

**GMGT 7710** Managerial Communication Cr.Hrs.1.5  
(Formerly 027.771) Focus is on the interpersonal, intergroup, and intraorganizational communication skills required for effective leadership, and the objectives are to assist the participants in the following: increasing the clarity, correctness, and effectiveness of written and oral communication; recognizing and analysing communication dynamics at work in personal, group, and organizational interactions; increasing combination flexibility and proficiency in times of corporate challenge, change, and crisis.

**GMGT 7720** Business Conditions Analysis Cr.Hrs.1.5  
(Formerly 027.772) To provide an awareness of key components of the economic/business environment. Identifies critical indicators that affect decision-making and suggests strategies for forecasting future conditions. Topics covered include critical demographic trends, the change technological frontier, international trade, finance, and investment trends, and trends in interest rates and exchange rates. A theoretical overview will precede the discussion of business conditions indicators.

**GMGT 7740** Business/Government Relations Cr.Hrs.1.5  
(Formerly 027.774) Focuses on the logic of political-economic-business relations. The point of view is that of the manager. Specific tools of analysis are discussed that assist managers in understanding and working with aspects of public policy which interface with their private sector decisions.

## Business Administration -INTB 7000 Level

**INTB 7030** Comparative Management Cr.Hrs.3  
(Formerly 027.703) Comparative study and evaluation of



management philosophy and practices in cross-cultural setting; the cultural, economic, and political environment which influence management decision-making. Not taught every year.

**INTB 7040** International Organizational Behaviour Cr.Hrs.3  
The examination of dilemmas and opportunities that managers face when they work in a cross-cultural setting. The purpose of this course is to develop the necessary understandings and skills to effectively manage problems arising from the interaction of people from different cultures in work settings. Not to be held with INTB 7030 (or 027.703).

**INTB 7730** International Business Cr.Hrs.1.5  
(Formerly 027.773) Develop an appreciation of business decision-making in an international/global context. Learning activities are focused towards developing intellectual and interpersonal skills in order for managers to function more effectively in international markets.

### Business Administration -HRIR 7000 Level

**HRIR 7140** Topics in Industrial Relations/Human Resource Management Cr.Hrs.3  
(Formerly 027.714) An in-depth analysis of various topics in industrial relations and human resource management. Prerequisite or corequisite: HRIR 7450 (or 027.745).

**HRIR 7162** Staffing Cr.Hrs.3  
This advanced graduate seminar provides an understanding of the staffing function of Human Resources Management. The course focuses on how recruitment, selection, performance management, and retention management function within an organization to gain a competitive advantage through the management of work and people.

**HRIR 7164** Training and Development Cr.Hrs.3  
This advanced graduate seminar provides an understanding of the training and development functions of Human Resources Management. The course focuses on how to design, implement, and evaluate a training program, and employee development and career management.

**HRIR 7166** Compensation Cr.Hrs.3  
A review of the major concepts and design of compensation systems including: strategy, internal equity, external competitiveness, rewarding individual contributions, performance incentives, employee benefits, government regulations, union role in compensation, budgets and administration.

**HRIR 7168** The Management of Labour and Employee Relations Cr.Hrs.3  
An examination of the systems of labour and employee relations in Canada as it compares with the systems of other countries. Emphasis upon understanding and managing labour and employee relations in a changing economy. Not to be held with HRIR 7500 (or 027.750).

**HRIR 7450** Industrial Relations/Human Resource Management Cr.Hrs.3  
(Formerly 027.745) The process of valuing, employing, developing, motivating and maintaining human resources in an industrial society. An introduction to the study of labour relations in the social technical systems of the Federal Government, the Provincial Government and profit and non-

profit organizations.

**HRIR 7460** Collective Bargaining Cr.Hrs.3  
(Formerly 027.746) The labour management relations in the negotiation and administration of the collective agreement. The analysis of conflict and the application of bargaining theories. Pre- or corequisite: HRIR 7450 (or 027.745).

### Business Administration -ENTR 7000 Level

**ENTR 7240** Entrepreneurship and New Venture Formation Cr.Hrs.1.5  
(Formerly 118.724) Entrepreneurship and enterprising behaviour with an emphasis on the identification and evaluation of viable new venture concepts and their development into successful enterprises.

### Ph.D. Program -PHDM 7000 Level

**PHDM 7110** Doctoral Seminar in Management (Ph.D.) Cr.Hrs.3  
(Formerly 119.711) Examination of the philosophy of science in management and overview of management research typologies, methods, and the role of research in the practice of management. Prerequisite: admission to the Ph.D. program in Management or approval by instructor.

**PHDM 7120** Management Research Project 1 (Ph.D.) Cr.Hrs.3  
(Formerly 119.712) Examination of research designs and preparation of theoretical paper in management. Prerequisite: admission to the Ph.D. program in Management or approval by instructor.

**PHDM 7130** Management Research Project 2 (Ph.D.) Cr.Hrs.3  
(Formerly 119.713) Departments in the faculty offer two types of graduate programs, those leading to Master of Science and Doctor of Philosophy degrees and those leading to specialization and certification in a clinical discipline. Combinations of such programs can be arranged on an individual basis for students wishing both clinical and basic science research experience. Prerequisite: admission to the Ph.D. program in Management or approval by instructor.

### Interdepartmental -IDM 7000 Level

**IDM 7010** Industry Project Cr.Hrs.3  
(Formerly 098.701) Supervised study and research of a problem opportunity in business or management. Specific course requirements determined by the faculty member assigned to be the course coordinator. In addition, each project will be supervised by a faculty member expert in the area. Projects consist of written report(s) containing substantive, practical evidence and analytically structured comments, academic materials, and bibliographical references. Pass/Fail basis only. Prerequisite: completion of all 600-level MBA courses (or equivalent experience) and consent of MBA program director.

**IDM 7020** Managing for Sustainable Development Cr.Hrs.1.5  
(Formerly 098.702) Strategic issues related to the manager's



role in sustainable development, including enterprises in the renewable and non-renewable resource sectors, life-cycle analysis, and full cost accounting. Emphasis is placed on environmental management control systems, environmental performance measurement, reporting, and the impact of environmental management on strategic management decisions.

**IDM 7030** Social and Community Awareness Project Cr.Hrs.0

(Formerly 098.703) An experiential project examining issues related to economically and/or socially disadvantaged individuals and groups with emphasis on corporate social responsibility. This course is graded pass/fail.

**IDM 7040** Leadership and Personal Development Seminar Cr.Hrs.0

(Formerly 098.704) Preparation in computer, technical, interpersonal, and team-building skills for MBA MANITOBA program. This course is graded pass/fail.

**IDM 7050** International Study Trip Cr.Hrs.3

(Formerly 098.705) A supervised international experience to examine the relationship between corporations, senior managers, and social institutions in selected countries. Examination of the interplay between culture, economic development, management systems and strategies in other countries. Emphasis upon establishment of business networks on an international basis.

**IDM 7060** Professional Seminar Cr.Hrs.6

(Formerly 098.706) A series of modules on executive leadership and professional management topics.

**IDM 7070** Fundamental Professional & Leadership Seminar Cr.Hrs.1.5

(Formerly 098.707) Series of seminars covering fundamental topics essential for modern management including business ethics and managing diversity.

**IDM 7080** Professional and Leadership Seminar Cr.Hrs.1.5

(Formerly 098.708) Series of seminars covering fundamental topics essential for modern management including such topics as: aboriginal business, managerial law, situational leadership, creating shareholder value, developing a business plan, and career management.

**IDM 7510** Strategic Leadership and Managing Change Cr.Hrs.1.5

(Formerly 027.751) An examination of the role of the manager as a change agent and processes associated with strategic vision and change. Analysis of factors affecting strategic decisions and how organizations adapt to their environment. Emphasis is upon the role of leaders: transformational leadership, charisma, organizational design and managing organizational culture change.

**IDM 7720** Business Conditions Analysis Cr.Hrs.1.5

(Formerly 027.772) This course provides an awareness and understanding of key components of the economic and business environment. It explores critical forces that affect daily business decision-making including market supply and demand, the time value of money, and a firm's profitability and valuation. As well, the course introduces the concept of financial reporting.

## Marketing -MKT 6000 Level

**MKT 6080** Marketing Cr.Hrs.3

(Formerly 118.608) Analysis of the evolution and characteristics of marketing systems; the various types of consumers and their behaviour; marketing activities of the firm; legislation at all levels which affect marketing decisions.

## Marketing -MKT 7000 Level

**MKT 7080** Selected Topics in Marketing Cr.Hrs.3

(Formerly 118.708) A study of selected areas of recent development in the field of marketing. Topics may include the marketing of services, market research, business to business marketing, marketing channel systems, personal selling or sales management, and physical distribution. Prerequisite: MKT 6080 (or 118.608)

**MKT 7100** Readings in Marketing (Ph.D.) Cr.Hrs.3

(Formerly 118.710) A survey of current literature in the major areas of marketing and marketing research. Emphasis upon empirical developments as they affect the application of marketing concepts.

**MKT 7110** Doctoral Seminar in Marketing (Ph.D.) Cr.Hrs.3

(Formerly 118.711) Advanced study of marketing thought integrating the functional areas of marketing. Seminars on selected research topics and recent developments in the field.

**MKT 7120** Ph.D. Seminar in Buyer Behavior (Ph.D.) Cr.Hrs.3

(Formerly 118.712) Concepts and literature relating psychological and sociological perspectives to buyer behaviour in Marketing. Prerequisite: consent of instructor.

**MKT 7200** Decisions and Concepts in Marketing Cr.Hrs.3

(Formerly 118.720) Application of the principles of marketing from a managerial viewpoint; emphasis on marketing planning, strategy, and control; and appraisal of the effectiveness of marketing activities. Prerequisite: MKT 6080 (or 118.608).

**MKT 7210** Marketing and Competitive Behaviour Cr.Hrs.3

(Formerly 118.721) Designed to give the student a deeper understanding of the dynamics of marketing behaviour. Oriented towards theoretical conceptualizations of the problems and practices in marketing areas. Prerequisite: MKT 6080 (or 118.608).

**MKT 7220** Seminar in Marketing Cr.Hrs.3

(Formerly 118.722) Study of selected topics in marketing with emphasis on recent theoretical developments and their application. Prerequisite: MKT 6080 (or 118.608).

**MKT 7230** Seminar in Consumer Behaviour Cr.Hrs.3

(Formerly 118.723) Intensive study of consumer behaviour as it relates to the marketing function. Prerequisite or concurrent requirement: MKT 6080 (or 118.608).

**MKT 7300** International Marketing Cr.Hrs.3

(Formerly 118.730) A study of problems and opportunities of marketing in foreign environments. It will focus on the cultural, economic and geographical problems encountered in managing the marketing function from a Canadian



manager's perspective. Prerequisite: MKT 6080 (or 118.608).

**MKT 7500** Readings in Marketing Cr.Hrs.3  
(Formerly 118.750) Supervised readings in one of the areas of Marketing. Prerequisite: MKT 6080 (or 118.608) and at least one other graduate marketing course.

### Supply Chain Management -MSCI 5000

#### Level

**MSCI 5010** Mathematics for Management Cr.Hrs.3  
(Formerly 164.501) A remedial course in linear and matrix algebra and calculus; with applications to elementary management problems. Note: this course will not be included in the calculation of the Grade Point Average. Pass/Fail. Not to be held with 027.501.

### Supply Chain Management -MSCI 6000

#### Level

**MSCI 6070** Quantitative Analysis for Management Cr.Hrs.3  
(Formerly 164.607) Introduction to the use of quantitative techniques, and computers to solve management problems. Mathematical optimization models, network analysis, and probability models. Prerequisite: MSCI 5010 (OR 164.501). Not to be held with 027.607 OR 164.607.

### Supply Chain Management -MSCI 7000

#### Level

**MSCI 7550** Readings in Management Science (Ph.D.) Cr.Hrs.3  
(Formerly 027.755) A study of recent literature in the Management Sciences and their applications, with emphasis on new developments.

**MSCI 7560** Doctoral Seminar in Management Science (Ph.D.) Cr.Hrs.3  
(Formerly 027.756) Seminars on the selected research topics of recent advances in the field of Management Science covering areas of current interests.

**MSCI 7680** Mathematical Optimization Models Cr.Hrs.3  
(Formerly 164.768) A specialized course in mathematical optimization. Linear programming, integer programming, Fritz John and Kuhn-Tucker theorems, quadratic programming, nonlinear programming, duality, network analysis. Prerequisite: OPM 6090 (or 164.609 or 027.609).

### Supply Chain Management -OPM 6000

#### Level

**OPM 6090** Production Management Cr.Hrs.3  
(Formerly 164.609) Analysis of the basic concepts of production systems, and operation and control of such systems. Not to be held with 027.609.

### Supply Chain Management -OPM 7000

#### Level

**OPM 7300** Topics in Advanced Production and Operations Management Cr.Hrs.3  
(Formerly 164.730) A study of recent developments in production systems and management. Topics include systems design, plant location and layout, inventory systems planning and control. Prerequisite: OPM 6090 (or 164.609 or 027.609)

### Supply Chain Management -SCM 7000

#### Level

**SCM 7010** Advanced Supply Chain Management Cr.Hrs.3  
(Formerly 164.701) Provides students at the graduate level with an in-depth examination of the major issues associated with the management of supply chains. The course content includes both managerial and technical matters, and addresses issues such as the importance of supply chain management in meeting global competition, internet and e-business application, supply chain integration and relationships, sharing risks and rewards, and the reduction of variance in supply chain performance. Prerequisite: A degree in business or discipline related to supply chain management or approval by instructor.

### Health Administration

**CHSC 7130** Methods in Health Services Research and Evaluation Cr.Hrs.3

(Formerly 093.713) Examines the process of planning and conducting research and evaluation to assess health services with an emphasis on the methods by which a question may be translated into a testable hypothesis, and the specification of a research plan that will produce results of maximum internal and external validity.

**CHSC 7200** Health and Health Care in Developing Countries Cr.Hrs.3

(Formerly 093.720) The course will focus on the patterns of mortality and morbidity in developing countries and the organization of health care services. Social, cultural, and economic development will be related to health and health services.

**CHSC 7210** Epidemiology of Women's Health Cr.Hrs.3

(Formerly 093.721) This course will deal with problems and concerns particular to women's health. The topics will be approached from an epidemiological perspective but use will be made of materials from health economics, evaluation research, medical sociology and anthropology.

**CHSC 7220** Health and Health Services of Native People Cr.Hrs.3

(Formerly 093.722) This course provides a detailed review of the health status and the determinants of health of Canada's native people.

**CHSC 7270** Epidemiology of Chronic (Non-Cancer) Diseases Cr.Hrs.3

(Formerly 093.727) The objective is to study the natural history of chronic diseases including the distribution of



diseases, risk and prognostic factors, rationale and strategies for prevention. The methodological issues concerning the investigation of severe disease are also discussed. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752).

**CHSC 7290** Economic Evaluation of Health Care Cr.Hrs.3 (Formerly 093.729) The objectives of this course are to enable students to understand economic evaluation methodologies (cost-effectiveness, cost-benefit, cost-utility analysis) as applied to health care and to familiarize them with the applied literature on economic evaluation of health care. Prerequisite: permission of instructor.

**CHSC 7300** Health Policy and Planning Cr.Hrs.3 (Formerly 093.730) This course defines health policy and describes the planning and decision-making process. Case studies will be used to illustrate and critique the substance, process and outcome of policy papers that address contemporary policy issues. Prerequisite: permission of instructor.

**CHSC 7310** Epidemiology of Health Care Cr.Hrs.3 (Formerly 093.731) This course will discuss the advantages and disadvantages of using large administrative data bases for research purposes. Substantive topics dealt with include: regional variations in provision and utilization of health care, short- and long-term outcomestudies, individual physician behaviour, and technology assessment. Policy implications are considered. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752) or equivalent and permission of instructor.

**CHSC 7320** Organization and Financing of the Canadian Health Care System Cr.Hrs.3 (Formerly 093.732) Students will study the historical development and current structure of the Canadian health care system and relate its development to changes in social and political factors. The course provides an economic perspective on current policy issues in the organization, financing, and delivery of health care in Canada.

**CHSC 7330** Cultural Perspectives on Illness and Medical Practice Cr.Hrs.3 (Formerly 093.733) The objective of this course is to make students aware of the ways in which disease, illness, and medical practice are socially and culturally mediated. The course will examine cultural influences on the experience and expression of illness and consider the medical practitioner's role in the development and provision of culturally responsive health care. Prerequisite: permission of instructor.

**CHSC 7360** Clinical Trials Cr.Hrs.3 (Formerly 093.736) The Randomized Clinical Trial is the only true experiment in clinical research. This course is intended to give students a detailed knowledge of the design and implementation of RCTs. Students will participate in a qualitative review of RCTs. Prerequisites: a minimum grade of "B" in CHSC 7520 (or 093.752) , CHSC 7470 (or 093.747), CHSC 7480 (or 093.748) or equivalents.

**CHSC 7380** Prevention and Health Cr.Hrs.3 (Formerly 093.738) The course will cover frameworks used in -formulating preventive strategies. Topics will include risk factor assessment, screening, health education, legislation, litigation, lifestyle and prevention. Actual case studies will be

used. Prerequisite: CHSC 7520 (or 093.752) and CHSC 7530 (or 093.753).

**CHSC 7390** Health Promotion Cr.Hrs.3 (Formerly 093.739) An examination of theories, principles, practices and settings for health promotion. Prerequisite: permission of instructor.

**CHSC 7400** Directed Readings I: In Epidemiologic Methods Cr.Hrs.3 (Formerly 093.740) An opportunity for advanced students to acquire knowledge in a defined and specific area of interest. Prerequisites: permission of instructor and Graduate Program Director.

**CHSC 7410** Directed Readings: II - In Epidemiology Cr.Hrs.3 (Formerly 093.741) An opportunity for advanced students to acquire knowledge in a defined and specific area of interest. Prerequisite: permission of instructor and Graduate Program Director.

**CHSC 7430** Seminars on Advanced Topics: II - In Methods of Health Care Cr.Hrs.3 (Formerly 093.743) Sem-inars dealing with current research issues, emerging methodologies and analytical techniques will be offered for advanced students. Prerequisite: permission of instructor.

**CHSC 7450** Epidemiology of Communicable Diseases Cr.Hrs.3 (Formerly 093.745) Overview of epidemiological principles in communicable disease investigation and prevention and specific issues in controls of certain specific communicable diseases of public health importance in Canada will be introduced. Prerequisite: permission of instructor. Prerequisite: a minimum grade of "B" om CHSC 7520 (or 093.752).

**CHSC 7460** Environmental and Occupational Health Cr.Hrs.3 (Formerly 093.746) The aim of the course is to acquaint the student with the role of the environment (general and specifically working) as the determinant of health. The content of the course will be presented in the form of lectures, seminars, and field visits. Prerequisite: permission of instructor.

**CHSC 7490** Empirical Perspectives on Social Organization and Health Cr.Hrs.3 (Formerly 093.749) This course will focus on a selected review of the epidemiological literature which has integrated social factors in the investigation of the distribution of health and illness in society. The course will review a selection of important empirical studies investigating the roles played by social, psychological and economic status factors in determining health and illness. Emphasis will be placed on identifying the central theoretical and methodological approaches to defining and measuring socioeconomic status in this literature. Prerequisite: permission of instructor.

**CHSC 7510** Current Topics in Community Health Cr.Hrs.3 (Formerly 093.751) Focus on current issues and topics in community health, particularly as they relate to Manitoba and to Canada. Emphasis will be placed on current literature and ongoing research to examine emerging policies and programs within health care and social development.



Prerequisite: basic courses in Epidemiology and Statistics.  
Prerequisites: a minimum grade of "B" in CHSC 7520 (or 093.752) and CHSC 7470 (or 093.747) and CHSC 7320 (or 093.732).

**CHSC 7520** Principles of Epidemiology 1 Cr.Hrs.3  
(Formerly 093.752) This course will introduce the basic concepts and methods of epidemiology, including the definition and measurement of health status and health determinants in populations, assessing health risks and inferring causation, and issues in the design and analysis of population health studies.

**CHSC 7530** Principles of Epidemiology II Cr.Hrs.3  
(Formerly 093.753) This course follows the Principles of Epidemiology I and discusses the applications of epidemiologic principles in public health practice, including the investigations of epidemics, disease surveillance, clinical applications, evaluation of health programs, and the planning of preventive programs. Students will also receive instruction in microcomputer applications and use of EPI-INFO software for data entry, analysis and presentation. Corequisite: CHSC 7480. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752) and in CHSC 7470 (or 093.747)..

**CHSC 7540** Advanced Epidemiology Cr.Hrs.3  
(Formerly 093.754) Advanced epidemiologic research methods focusing on selected epidemiological issues (bias, confounding, matching, etc.). Discussion will be directed to both epidemiological and statistical considerations to find the optimal solution to a research problem. Prerequisites: a minimum grade of "B" in CHSC 7520 (or 093.752), CHSC 7530 (or 093.753), CHSC 7280 (or 093.728).

**CHSC 7550** Observational Epidemiology Cr.Hrs.3  
(Formerly 093.755) Intermediate epidemiologic research methods focusing on case-control and cohort studies, with discussion on issues relating to planning and design, implementation, and data analysis. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752) and CHSC 7530 (or 093.753) and CHSC 7470 (or 093.747) and CHSC 7480 (or 093.748)..

**CHSC 7560** Epidemiology of Cancer Cr.Hrs.3  
(Formerly 093.756) This course introduces the magnitudes, risk factors and prevention strategies of cancer. It focuses on current knowledge related to the etiology of cancer, medical interventions and potential for prevention. Prerequisite: a minimum grade of "B" in CHSC 7520 (or 093.752).

**CHSC 7610** Advanced Topics in Community Health  
1 Cr.Hrs.1.5  
Special advanced research topics in Community Health Sciences.

**CHSC 7620** Advanced Topics in Community Health  
2 Cr.Hrs.1.5  
Special advanced research topics in Community Health Sciences.

**CHSC 7710** Social Aspects of Aging Cr.Hrs.3  
This course is an advanced seminar designed to examine current social issues in aging. The course is organized around selected topics related to aging. Where possible, the Canadian experience will be compared to international trends and diversity will be highlighted. The first section is a review of the field of gerontology, ageism, demographic

trends, theoretical perspectives and methods and the second section explores contemporary social issues. This course is a required course for the Graduate Specialization in Aging Certificate.

**CHSC 7720** Health and Aging Cr.Hrs.3  
This course is an advanced seminar designed to examine health and health care issues in aging. Where possible, the Canadian (or Manitoban) experience will be highlighted. Key topics in the health domain will be covered, such as frailty, mental health, and dementia. The provision of care for older adults will also be covered, focusing on both the formal care system, as well as informal care providers. This course is a requirement for the Graduate Specialization in Aging.

**CHSC 7730** Topics in Health Services Research Cr.Hrs.3  
This course will expose students to select health services research topics that are particularly relevant in Manitoba and Canada. Students are expected to actively engage in seminars led by health services researchers and decision-makers, and also provide informative presentations in their own area of research. Students will also gain knowledge about various communication and knowledge translation strategies.

**CHSC 7740** Advanced Qualitative Methods Cr.Hrs.3  
The purpose of this course is to provide students with fundamental aspects related to qualitative research methods and analysis. By the end of the course, students should have an understanding of the principles and practices involved in: the application of different social theories to qualitative methods; designing a qualitative research study; various ways of collecting qualitative data and analyzing written texts; ways of integrating qualitative methods in a mixed methods design; developing different products for knowledge exchange activities; and 'hands-on' experience in doing qualitative analysis using qualitative software.

**CHSC 7810** Biostatistics for the Health and Human Sciences  
1 Cr.Hrs.3  
An introduction to statistical ideas and techniques for health sciences and human research. Describing data, patterns in data, the Normal distribution. Principles of estimation and principles of hypothesis testing. Principles and practice of the major statistical tests (t tests, analysis of variance, Chi squared tests, correlation and regression). Nonparametric statistical techniques. The use of statistical software to carry out statistical analyses. Analytic decision strategies.

**CHSC 7820** Biostatistics for Community Health Sciences  
1 Cr.Hrs.3  
The course will cover techniques of research design and analysis for community health researchers. Topics include: principles of experimental design, study size determination, statistical software as an analytical tool, techniques for the analysis of continuous outcomes, analysis of variance for multi-way, factorial and split-unit experiments, and multiple regression and general linear models. Introduction to more advanced statistical methods including logistic regression and survival models. Prerequisite: Undergraduate course in statistics.

**CHSC 7830** Biostatistics for Community Health Sciences  
2 Cr.Hrs.3  
This course will cover techniques for the analysis of complex data sets involving continuous, categorical and time-related outcome variables. Principles of statistical modeling. The



behaviour of non-continuous variables. Categorical outcome variables and logistic regression. Poisson outcome variables and Poisson regression. Time-dependent outcomes, survival analysis and proportional hazards regression. Prerequisite: CHSC 7820 with a grade of B+ or better.

**CHSC 7860** Methods and Concepts for Community Health Sciences Cr.Hrs.3

This course is designed to provide both a practical and theoretical introduction to qualitative, quantitative, and multi-method approaches used in health research. The emphasis in the course will be on applied research, consistent with the characteristics of the Department of Community Health Sciences as a whole.

**CHSC 7870** Health Survey Research Methods Cr.Hrs.3

Students critically examine the use of health survey methodology within epidemiology. They also learn to apply survey methodology, as a means to gain a strong appreciation of the reflective, theoretical and analytical thinking required to successfully design and implement epidemiological health surveys. Prerequisites: CHSC 7820 and CHSC 7520.

### Business Government Relations

**POLS 7280** Directed Readings in Politics Cr.Hrs.3

(Formerly 019.728) An independent reading and/or research course on a selected topic in political studies, undertaken and arranged in consultation with the prospective instructor, upon the approval of the Graduate Committee. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 7290** Directed Readings in Politics 2 Cr.Hrs.6

(Formerly 019.729) An independent reading and/or research course on a selected topic undertaken and arranged in consultation with the prospective instructor, upon approval of the Graduate Committee. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 7300** Directed Readings in Public Administration Cr.Hrs.3

(Formerly 019.730) An independent reading and/or research course on a selected topic undertaken and arranged in consultation with the prospective instructor, upon approval of the Graduate Committee. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 7330** State-Civil Society Relations Cr.Hrs.3

An examination of how the state relates to civil society actors, notably the voluntary sector in Canada. Students will critically assess the role voluntary organizations play - and should play - in governing process.

**POLS 7340** Canadian Government Cr.Hrs.3

(Formerly 019.734) Examines the core institutions of Canadian Government and politics including parliamentary government, federalism, the Constitution and the Charter of Rights and Freedoms. Students may not hold credit for both POLS 7340 (or 019.734) and the former 019.776.

**POLS 7350** Canadian Democracy Cr.Hrs.3

(Formerly 019.735) Examines the core institutions and

processes of Canadian democracy including political parties, elections, voting, social movements, interest groups and public opinion. Students may not hold credit for both POLS 7350 (or 019.735) and the former 019.776.

**POLS 7370** Seminar in the Theory and Practice of Public Administration Cr.Hrs.6

(Formerly 019.737) The intent of this course is to provide insight into the exigencies of actual public administration. The course will be conducted on a topical basis within the framework of certain trends facing Canadian governments today. (The course will attempt to utilize, to the fullest extent possible, the particular expertise of students in the program, faculty members, and of both elected and appointed public officials.) Students may not hold credit for both POLS 7370 (or 019.737) and the former 019.731.

**POLS 7410** Selected Topics in Political Behaviour 1 Cr.Hrs.3

(Formerly 019.741) A systematic examination of empirical research in the area of political socialization and political culture. Students may not hold credit for both POLS 7410 (or 019.741) and the former 019.725.

**POLS 7470** Strategic Human Resource Management in Government Cr.Hrs.3

A study of the human resource management functions, including planning, staffing, training, performance management, compensation and labour relations, in ways that optimize organizational performance. This course will also address contemporary challenges including recruitment and retention, managing change, demographic shifts, and information technology.

**POLS 7520** The Political Classics Cr.Hrs.3

(Formerly 019.752) A thorough study of selected works with special attention to methodology, historical content, theoretical position and universal significance. Students may not hold credit for both POLS 7520 (or 019.752) and the former 019.771.

**POLS 7530** International Political Economy Cr.Hrs.3

(Formerly 019.753) An examination of the systematic study of international political economy. Particular attention is paid to the foreign economic policies of advanced industrialized states and the various issues surrounding the redistribution of wealth and influence in the contemporary international system.

**POLS 7550** Contemporary Issues in Canadian Politics Cr.Hrs.3

(Formerly 019.755) A seminar series examining a contemporary debate in Canadian politics and government. The specific topic will vary from year to year depending on faculty interest and specialization.

**POLS 7610** Political Theory and Contemporary Issues Cr.Hrs.3

(Formerly 019.761) An examination of recent theoretical perspectives on contemporary political institutions, problems and values. Students may not hold credit for both POLS 7610 (or 019.761) and the former 019.771.

**POLS 7710** Liberalism and Its Critics Cr.Hrs.3

An advanced study of liberalism and various theoretical challenges to its ethical and political claims.



**POLS 7720** Comparative Government Cr.Hrs.6  
(Formerly 019.772) Three hours a week, both terms. The primary focus of this course will be on the major Western "democracies" (e.g., United Kingdom, United States, and Western Europe). Phenomena to be examined include political participation and the problems of social change in industrial societies.

**POLS 7790** International Relations Theory Cr.Hrs.3  
(Formerly 019.779) A critical assessment of basic theories and models used in International Relations, emphasizing theoretical approaches and research. Students may not hold credit for both POLS 7790 (or 019.779) and the former 019.773.

**POLS 7850** Contemporary Strategic and Security Studies Cr.Hrs.6  
(Formerly 019.785) An advanced course in strategic studies. The evolution of strategic thought in the modern period will be examined, and particular emphasis will be placed on the role of armed force in relation to the problem of international security. Students may not hold credit for both POLS 7850 (or 019.785) and the former 019.783. Normally students will be expected to have taken POLS 4730 (or 019.473) or its equivalent as prerequisite.

**POLS 7910** Multivariate Research Methods Cr.Hrs.3  
(Formerly 019.791) Introduction to the theory and application of multivariate regression models in political analysis. Students may not hold credit for POLS 7910 (or 019.791) and either the former 019.732 or 019.788.

## Mathematical, Computational and Statistical Sciences

Institute of Industrial Mathematical Sciences (IIMS)

**Campus Address/General Office:** 420 Machray Hall

**Telephone:** (204) 474 6724

**Fax:** (204) 474 7602

**Email Address:** [iims@umanitoba.ca](mailto:iims@umanitoba.ca)

**Website:** <http://umanitoba.ca/institutes/iims>

The Master of Mathematical, Computational and Statistical Sciences is a joint program of the Departments of Mathematics, Computer Science and Statistics. The program is interdisciplinary both in concept and structure, and furthers the mission of the University of Manitoba in its intent to enhance contacts and partnerships with outside organizations.

Students enrolled in the program are employees of industry, business or government. A major component of a student's program is a practicum, which is intended to make an important contribution to a project at the student's place of employment. While working on the practicum the student will be jointly supervised by an Industry Advisor (from the student's workplace) and an Academic Advisor (from the University).

### Fields of Research

All applied areas of mathematics, computer science and statistics are potential fields of research under this program.

### Research Facilities

The Institute of Industrial Mathematical Sciences is a research institute within the Faculty of Science. The IIMS has the mandate to conduct applied research in the mathematical, computational or statistical sciences -- either in collaboration with industry, or on problems motivated by industrial applications. The IIMS also facilitates collaboration between mathematical scientists and industrial partners, and among mathematical scientists in different disciplines. The director of the IIMS is the coordinator of the Master of Mathematical, Computational and Statistical Sciences program.

### Master of Mathematical, Computational and Statistical Sciences, Admission

All applications will be reviewed on an individual basis, using the criteria for admission of the Faculty of Graduate Studies. Students are normally expected to have completed a four-year Bachelor's degree in Engineering, Management, Science or other related areas for entrance. In exceptional cases, industrial experience together with appropriate university courses may be considered to be equivalent to the completion of a four-year degree.

### Application Deadlines

The following are the deadlines for submission of applications to the IIMS:

Start Date	Canadian/U.S.	Non-Canadian
Regular (September)	June 1	March 1
Winter (January)	October 1	July 1
Spring (May)	February 1	November 1
Summer (July)	April 1	January 1

### Program Requirements

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. A minimum of 18 credit hours of approved course work, and a practicum. The specific courses to be taken will depend upon the student's background and area of concentration. Normally, the courses to be taken will be selected from the three participating departments, although appropriate courses from the faculties of Engineering and Management may also be permitted. A required course of all students is a graduate level Industrial Modelling course. This course is currently under development, and will be team taught by members of the three departments.

Second language reading requirement: none

Expected time to graduate: 18 months



Courses listed under the departments of Mathematics, Computer Science and Statistics are potential courses in this program.

## Mathematics

**Head:** G. R. Krause

**Campus Address/General Office:** 342 Machray Hall

**Telephone:** (204) 474 8703

**Fax:** (204) 474 7611

**Email Address:** [mathematics\\_dept@umanitoba.ca](mailto:mathematics_dept@umanitoba.ca)

**Website:** <http://www.math.umanitoba.ca>

**Academic Staff:** Please refer to our website for academic staff information: <http://www.math.umanitoba.ca/>

The department offers Master's and Ph.D. programs at the graduate level, which cover many areas of mathematics. Graduates find work in industry or in academia.

### Fields of Research

The department has people working in the areas of algebra, analysis, computational mechanics, computer graphics, differential equations, discrete mathematics, finite-element methods, foundations, geometry, matrix computations, numerical analysis and topology. More information about specific individuals and their current graduate students can be found on the department web pages.

The department operates several seminars in addition to graduate courses. Faculty, graduate students and visitors from all over the world participate in such research seminars. Regular seminars are held in discrete mathematics, functional analysis, rings and modules, mathematical biology, topology and universal algebra/lattice theory. There is also a weekly graduate student seminar in which graduate students give talks on topics of their choice.

### Research Facilities

The department provides each graduate student with an office (shared) and access to computers, laser printers, mail, photocopier, fax machine, mathematical journals, a reading room and a lounge.

The computer room has several Macintosh and Windows computers running the operating systems - Mac O/S, Windows. Software programs include Maple, Mathematica, MathCad, Matlab, Scientific Workplace, word processing/spreadsheet programs, web access and network access to UNIX servers.

### M.Sc. in Mathematics, Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, students should generally have a strong background in Mathematics with courses leading to an Honours or four-year Major in Mathematics in a B.Sc., B.A., or equivalent degree. The department's Graduate Studies Committee will evaluate the student's background. Admission to the program will be based on this evaluation. Students with other degrees or backgrounds may be eligible for admission to a pre-Master's program to the satisfaction of the department. Courses will be prescribed on an individual basis to help the student qualify for graduate work in Mathematics. Contact the department for information.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 4 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 9 months prior to their intended start date.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The program consists of approved coursework and a thesis or practicum. Students are required to take 15 credit hours of coursework, of which at least 6 hours must be at the graduate level in Mathematics and at least 6 hours in an area of Mathematics clearly different from the area of specialization of the thesis or practicum. Particular programs of study within Mathematics may require courses outside the Department of Mathematics.

Second language reading requirement: none

Expected time to graduate: two years

### Ph.D. in Mathematics, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Students entering the Ph.D. program must have either an Honours degree or a M.Sc. degree in Mathematics.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 4 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 9 months prior to their intended start date.

### Program Requirements



Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Particular programs of study within mathematics may require courses outside the Department of Mathematics. In addition to the course work, the student is required to take a candidacy examination, which will consist of three comprehensive exams from the following areas: Algebra, Analysis, Combinatorics, Differential Equations, Geometry, Computational Mathematics, Topology, at least one of which must be Algebra or Analysis. The candidate's supervisor must approve the choice of subjects. To proceed to a Ph.D. degree a student must have a grade of "A" on each of the three parts.

Second language requirement: yes

Expected time to graduation: 3-5 years

## Mathematics

**MATH 8010** Advanced Matrix Computations Cr.Hrs.3 (Formerly 136.801) Matrix computation, decomposition of matrices, iterative methods, sparse matrices, eigenvalue problems. Prerequisites: linear algebra, computing, numerical analysis, and consent of instructor.

**MATH 8110** Applied Finite Element Analysis Cr.Hrs.3 (Formerly 136.811) Theory and practice of the finite element method of the solution of partial differential equations and its application to engineering and scientific problems. It includes the h, p and h-p versions, a priori and a posteriori error estimates, adaptability and the structure of finite element software. Prerequisite: numerical analysis and partial differential equations or consent of the instructor.

**MATH 8150** Numerical Solution of Partial Differential Equations Cr.Hrs.3 (Formerly 136.815) Finite-difference and finite-element methods for parabolic, elliptic and hyperbolic partial differential equations. Prerequisites: partial differential equations, numerical analysis, and consent of instructor.

**MATH 8210** Topics in Combinatorics 1 Cr.Hrs.3 (Formerly 136.821) Topics will be chosen from the areas of algebraic combinatorics, coding theory, design theory, enumerative combinatorics, graph theory, Prerequisite: approval of department.

**MATH 8310** Partial Differential Equations of Applied Mathematics Cr.Hrs.3 (Formerly 136.831) Complex-variable methods, perturbation methods, variational methods, discontinuities. Prerequisites: partial differential equations, complex variables, and consent of instructor.

**MATH 8410** Seminar in Applied and Computational Mathematics 1 Cr.Hrs.3 (Formerly 136.841) Designed to accommodate special topics in applied or computational areas of mathematics not included in other course offerings. Students are advised to consult the department as to availability.

**MATH 8420** Seminar in Applied and Computational Mathematics 2 Cr.Hrs.6 (Formerly 136.842) Designed to accommodate special topics in applied or computational areas of mathematics not included in other course offerings. Students are advised to consult the department as to availability.

**MATH 8430** Seminar in Mathematics 1 Cr.Hrs.3 (Formerly 136.843) Designed to accommodate special topics not included in topics courses. Prerequisite: approval of department.

**MATH 8440** Seminar in Mathematics 2 Cr.Hrs.6 (Formerly 136.844) Designed to accommodate special topics not included in topics courses. Prerequisite: approval of department.

**MATH 8510** Topics in Algebra 1 Cr.Hrs.3 (Formerly 136.844) Designed to accommodate special topics not included in topics courses. Prerequisite: approval of department.

**MATH 8520** Topics in Algebra 2 Cr.Hrs.6 (Formerly 136.852) Topics will be chosen from the areas of associative and non-associative algebras, Boolean algebra and lattice theory, category theory, group theory, ring theory and universal algebra. Prerequisite: approval of department.

**MATH 8610** Topics in Analysis 1 Cr.Hrs.3 (Formerly 136.861) Topics will be chosen from the areas of asymptotics, functional analysis, operator theory, real and complex variables, summability theory, topological vector spaces. Prerequisite: approval of department.

**MATH 8620** Topics in Analysis 2 Cr.Hrs.6 (Formerly 136.862) Topics will be chosen from the areas of asymptotics, functional analysis, operator theory, real and complex variables, summability theory, topological vector spaces. Prerequisite: approval of department.

**MATH 8710** Topics in Foundations 1 Cr.Hrs.3 (Formerly 136.871) Topics will be chosen from the areas of logic, model theory, recursive functions, set theory. Prerequisite: approval by department.

**MATH 8720** Topics in Foundations 2 Cr.Hrs.6 (Formerly 136.872) Topics will be chosen from the areas of logic, model theory, recursive functions, set theory. Prerequisite: approval by department

**MATH 8810** Topics in Geometry 1 Cr.Hrs.3 (Formerly 136.881) Topics will be chosen from the areas of algebraic curves, combinatorial geometry, Euclidean geometry, fractal geometry, groups and geometrics, projective geometry. Prerequisite: approval of department.

**MATH 8910** Topics in Topology 1 Cr.Hrs.3 (Formerly 136.891) Topics will be chosen from the areas of compactifications and related extensions, covering properties, rings of continuous functions, set-theoretic topology, topological groups, uniformities and related structures. Prerequisite: approval of department.

## Mechanical and Manufacturing



## Engineering

**Head:** D. Kuhn

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**Fax:** (204) 275 7507

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**Website:** [http://umanitoba.ca/engineering/mech\\_and\\_ind](http://umanitoba.ca/engineering/mech_and_ind)

**Academic Staff:** Please refer to our website for academic staff information: [http://umanitoba.ca/engineering/mech\\_and\\_ind](http://umanitoba.ca/engineering/mech_and_ind)

The graduate program in the Department of Mechanical and Manufacturing Engineering at the University of Manitoba is well-recognized amongst Mechanical Engineering Departments across and outside Canada. We are proud to deliver a world-class graduate experience leading to degrees in Doctor of Philosophy (Ph.D.), Master of Science (M.Sc.) and Master of Engineering (M.Eng.). All programs are led by well-established professors and adjunct professors engaged with local industry or hospitals with interlocking specializations and the professors are actively engaged in fundamental and cutting edge research in various fields. Our graduate students have access to state-of-the-art research facilities and we value the importance of challenging and relevant course work, effective supervision and high quality meaningful research.

### Field of Research

**Fluid Mechanics:** Active research in this area is performed in turbulence, computational fluid dynamics, multiphase flow with droplets and engineering calculations of fluid flow. Droplets vaporization and burning, premixed and non-premixed swirling and non swirling turbulent flames, liquid-fuel -jet break-up and atomization, turbulent measurement and modelling, underwater kinetic turbines.

**Thermal Sciences:** Concerned with the application of heat and work to engineering problems. Active research is performed in two phase flow, pool boiling simulation, enhanced heat transfer, solid-liquid phase change, entropy analysis/optimization, combined heat transfer and heat transfer in porous media, acoustic wave propagation and supercritical flow stability, ocean hydrothermal energy and minerals research, super-critical properties of ocean hydrothermal fluids, runout table cooling in the steel processing industries.

**Material Science and Engineering:** Concerned with the behaviour of engineering materials. Active research is focused on deformation studies, joining of aerospace materials, acoustic emission, solidification and diffusion in microgravity, phase transformation in solids, wear and wear protection, processing of polymer composites, durability and interfaces in polymer composites.

**Applied Mechanics and Design:** Concerned with the analysis and conception of machine and structural components. Active research is performed in biomechanics,

solid mechanics, fracture mechanics, fatigue analysis, experimental and finite element analysis of stresses, stress analysis, vibrations and acoustics, kinematics and dynamics of linkage and mechanisms and computer aided design.

**Manufacturing and Production:** Concerned with analysis, design and operation of automated and feedback control systems. Active research is conducted in robotics, sensor technology, system integration, automatic controls, information systems, human-machine control systems, fluid power systems, teleoperation, virtual design and manufacturing, web-based manufacturing systems. Planning, design and operation of production using queuing theory, networks, scheduling, facilities planning and inventory planning models are also other areas of research.

### Research Facilities

Typical research facilities are: Fully equipped facility for turbulence measurements; apparatus to study porosity and multiphase flow in porous media; laser-induced fluorescence capabilities; Unix workstations and several high resolution graphics terminals; apparatus for measurement of pressure drop and heat transfer; two-phase flow regimes during condensation and many more; computer controlled x-ray diffractometer, TEM, SEMs, optical image analyzer, mechanical testing systems, constant stress creep machines, Hopkinson bar high-strain rate deformation systems; corrosion testing and research facilities; photo stress plus system facilities related to processing and manufacture of polymeric composites; laser optics laboratory comprising a vibration-free optical bench; a 10 ton high frequency resonant fatigue machine; analog-digital facilities for the analysis of acoustic and vibration signals; advanced manufacturing cells under full control of personal computers; a rapid prototyping system with a SLA3500 Stereolithography machine; a teleoperated hydraulic MK-II Unimate manipulator; a hydraulic test station for force/motion control studies; a measurement system for human dynamics including a Qualysis motion measurement system with 4-CCD infra red cameras and 3 Kistler Force Plates, in-house designed and built bipedal walking robots and Electromyography (EMG) systems; high speed computer workstations for computational simulations, water and spray/wind tunnels with Particle Image Velocimetry and flow visualization, pulsed and continuous wave laser systems, high-pressure combustion test facility, subsonic wind-tunnel facility, 2D laser Doppler velocimetry (LDV) system, high-speed imaging system.

### Mechanical and Manufacturing Engineering Degrees, M.Eng.

The M.Eng. program mainly provides working engineers and internationally trained engineers an opportunity to continue their studies and specialize in an area of interest. Applicants must have a minimum of B.Sc. degree in Engineering. In exceptional cases, based on the candidate's professional experience, this requirement may be waived by the department.

The minimum requirement for the award of the M.Eng. degree is 30 credit hours of coursework with at least nine



credit hours at the 700/7000 level. Of the 30 credit hours, six credit hours will be assigned to an approved project and report (069.705 M.Eng. Project and Report). The maximum time allowed for completion of the degree requirements is six years.

#### M.Sc.

Applicants are normally required to hold a Bachelor's degree in Mechanical Engineering or related field from a recognized university. Applicants with other engineering degrees or with honours degrees in related areas may also be accepted at the discretion of the department. In certain cases (e.g., non-engineering graduates), acceptance may be subject to satisfying certain requirements. Contact the department for more information.

A minimum of 18 credit hours of coursework will be required with at least nine credit hours at the 700/7000 level as approved by the student's advisor. The minimum time is one calendar year of full-time study and research and must be spent on campus. The maximum time limit is five years. All candidates for the M.Sc. degree are required to register in MECG 7890, M.Sc. Graduate Research Seminar. The M.Sc. degree will not be awarded without a passing grade in MECG 7890.

#### Ph.D.

Admission to the Ph.D. program is normally from the Master's degree level. Master's students making exceptional progress while enrolled in their program may be transferred to the Ph.D. program upon the consent of the department head based on recommendations from the student's advisor and an appointed selection committee who investigate the student's qualifications and suitability for Ph.D. study.

Minimum Program requirements set by the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of the Calendar. All candidates of the Ph.D. are required to register in MECG 7900, Ph.D. Graduate Research Seminar. The Ph.D. will not be awarded without a passing grade in MECG 7900. In addition, the department has supplementary regulations and students should consult with the department regarding Supplementary Regulations.

#### Application Deadlines

The Department of Mechanical and Manufacturing Engineering allows graduate students to begin their program in January, May, July or September of each year. Canadian and US students should send their applications with supporting documentation directly to the Faculty of Graduate Studies no less than three (3) months before the intended start date. International students should send their applications no later than seven months (7) before the intended start date.

## Mechanical and Manufacturing Engineering

### MECG 7150 Conduction Heat Transfer Cr.Hrs.3

(Formerly 025.715) Steady and unsteady state heat transfer by conduction, single and multidimensional systems. Conduction with moving boundaries and computer uses of finite difference techniques.

### MECG 7160 Convective Heat Transfer Cr.Hrs.3

(Formerly 025.716) Conservation principles and flux laws. Differential and integral equations of the boundary layer. Momentum and heat transfer for laminar and turbulent flow inside tubes and over external surfaces.

### MECG 7170 Radiation Cr.Hrs.3

(Formerly 025.717) Thermal radiation properties, blackbody radiation, heat exchange by radiation among surfaces in the presence or absence of participating media. Theory and measurement techniques, network methods, solar energy utilization.

### MECG 7190 Classical Fluid Mechanics 1 Cr.Hrs.3

(Formerly 025.719) Bernoulli's equation, equations of motion, two-dimensional motion, streaming motions, aerofoils, sources and sinks, moving cylinders, theorem of Schwartz and Christoffel, jets and currents.

### MECG 7200 Classical Fluid Mechanics 2 Cr.Hrs.3

(Formerly 025.720) Helmholtz motions, right linear vortices, waves. Stokes stream function, spheres and ellipsoids, solid moving through a fluid, vortex motion, viscosity.

### MECG 7220 Boundary Layer Theory Cr.Hrs.3

(Formerly 025.722) Basic concepts of boundary layer and separation. Navier-Stokes equations, exact solutions. Momentum and energy equations, approximate solutions; boundary layer control, and thermal boundary layers.

### MECG 7240 Turbomachinery Cr.Hrs.3

(Formerly 025.724) Generalized flow relations in rotating machinery, velocity triangles, limitation on work done per stage and Mach number effects, vortex flow, flow in cascades, blade temperatures and stresses, performance of turbomachines.

### MECG 7260 Theory of Vibrations Cr.Hrs.3

(Formerly 025.726) The formulation of vibration problems using variational principles; matrix formulation of the free and forced vibrations of discrete and continuous systems; the effect of damping; approximate methods for solving the equations of motion; numerical techniques.

### MECG 7290 Diffusion in Solids Cr.Hrs.3

(Formerly 025.729) Diffusion equations, atomic theory of diffusion, diffusion in dilute alloys, diffusion in a concentration gradient, diffusion in non-metals, high diffusivity paths, thermal diffusion, and electrolysis in solids.

### MECG 7330 Phase Transformation in Solids Cr.Hrs.3

(Formerly 025.733) Advanced treatment of phase transformations in solids such as precipitation, eutectoid decomposition, and martensitic reactions.



**MECG 7340** Corrosion and Oxidation of Metallic Materials Cr.Hrs.3  
(Formerly 025.734) Topics include the electromechanical basis of corrosion, corrosion prevention by inhibitors, alloying and heat treatment passivity, stress corrosion cracking and fatigue, crack initiation and propagation, solid state chemistry including ionic and electronic conduction, and oxidation of metals and alloys.

**MECG 7350** Research Topics in Physical Metallurgy and Metal Physics Cr.Hrs.3  
(Formerly 025.735) Topics selected from recent researches in physical metallurgy and metal physics.

**MECG 7370** Modern Research Techniques Cr.Hrs.3  
(Formerly 025.737) Laboratory course designed to introduce the research student to a wide variety of equipment and techniques useful in metallurgical research, discussion, and laboratory.

**MECG 7380** Electron Microscopy of Materials Cr.Hrs.3  
(Formerly 025.738) Theory and practice of electron microscopy, with emphasis on the application of transmission technique to materials research.

**MECG 7390** Dislocation Theory Cr.Hrs.3  
(Formerly 025.739) Description of a dislocation; the stress field around a dislocation; forces on a dislocation; dislocation reactions in crystals, dislocation multiplication, pole mechanisms, twinning, stacking fault tetrahedron. Peierls force and related topics; image forces, interactions with point defects and other topics.

**MECG 7400** Solidification of Metals and Alloys Cr.Hrs.3  
(Formerly 025.740) The theory of solidification with respect to microstructure and solute distribution. Practical applications such as casting semiconductors and zone refining.

**MECG 7410** Theory of Turbulence Cr.Hrs.3  
(Formerly 025.741) Development and application of statistical theories to isotropic, nonisotropic, and homogeneous turbulent fluid motion.

**MECG 7420** Selected Topics in Turbulence Cr.Hrs.3  
(Formerly 025.742) An extension of MECG 7410 (or 025.741) to investigate the specialized problems of turbulence such as space-time correlation functions and spectral transfer in constrained and unconstrained fluid flows.

**MECG 7450** Biomechanics Cr.Hrs.3  
(Formerly 025.745) Topics in kinematics related to normal gait and prosthetic devices; properties of materials used for prostheses; arterial, bone, and composite materials, including design and manufacturing methods. Prerequisite: the former courses 025.213 or ECE 2090 (or 024.209) or consent of instructor.

**MECG 7460** Topics in Heat Transfer 1 Cr.Hrs.3  
(Formerly 025.746) Selected topics in heat transfer based on MECG 7150 (025.715), MECG 7160 (025.716), and MECH 7170 (025.717). Topics will be chosen from the following: conduction with and without internal heat generation, combined mode heat transfer problems, boiling and condensation heat transfer, heat exchanger design, propulsion systems heat transfer problems, special problems

in forced, free and mixed convection, and two-phase flow.

**MECG 7470** Topics in Heat Transfer 2 Cr.Hrs.3  
(Formerly 025.747) A continuation of certain topics of MECG 7460 (025.746) to include the most recent advances in these areas.

**MECG 7500** Topics in Aerodynamics Cr.Hrs.3  
(Formerly 025.750) Topics in Aerodynamics.

**MECG 7510** Industrial Engineering Systems Cr.Hrs.3  
(Formerly 025.751) Production engineering, equipment procurement decisions, plant layout and materials handling, optimization methods, models and simulation, control of engineering operations, data processing. Prerequisites: MECG 7520 (or 025.752) or 013.361.

**MECG 7600** Selected Topics in Engineering Design Cr.Hrs.3  
(Formerly 025.760) Lectures and seminars on selected advanced topics in the field of mechanical engineering design.

**MECG 7610** Engineering Properties of Polymers Cr.Hrs.3  
(Formerly 025.761) A survey of the physics of crystalline and amorphous polymers, including molecular weight distribution measurements, physics of rubber elasticity, theories of the glass transition, crystallinity measurements, crystallization kinetics, mechanical properties of crystalline and amorphous polymers.

**MECG 7620** Fracture of Materials and Structures Cr.Hrs.3  
(Formerly 025.762) Griffith criterion for crack propagation, stress intensity factors, plasticity effects, experimental methods for evaluation of criteria, J-integral, crack opening displacement. Microscopic aspects, dislocations at the crack tip, cleavage fracture, nil ductility temperature. Fatigue, creep, stress corrosion cracking.

**MECG 7680** Advanced Operations Research Cr.Hrs.3  
(Formerly 025.768) Formulations and algorithms for the following problems, set partitioning, set covering, clustering, location, layout, order picking, vehicle routing, vehicle scheduling. Applications of these problems to planning of manufacturing systems, scheduling of production, systems, materials handling systems and planning for warehouse and storage systems. Prerequisite: MECH 4760 (or 025.476) or consent of instructor.

**MECG 7690** Computer Integrated Manufacturing Cr.Hrs.3  
(Formerly 025.769) Basic concepts of microcomputer hardware and software with special emphasis on different manufacturing applications. These include data acquisition and analysis, machine monitoring and diagnostics, process control, robotics, machine tool control, automatic testing and quality control.

**MECG 7740** Selected Topics in Robot Technology Cr.Hrs.3  
(Formerly 025.774) The role of digital computers and digital interface equipment in the control and operation of robots. Fundamentals of robot kinematics and coordinate systems. Various robotic sensing systems such as vision, tactile, proximity, ultrasonic. The selection of topics may change from time to time depending on student interest and advances in the field of robotic technology. Prerequisite: MECH 4840 (or 025.484) or consent of instructor.



**MECG 7760** Advanced Solid Mechanics Cr.Hrs.3  
(Formerly 025.776) Selected advanced topics in solid mechanics; e.g., relationship between solid physics and solid mechanics, mechanical properties for static, low- and high-cycle fatigue, failure theories and mechanisms, theory of shell structures, numerical methods, applications.

**MECG 7770** Computer-Aided Engineering Cr.Hrs.3  
(Formerly 025.777) Principles and mathematical formulation of computer-aided design, manufacturing and database management systems; related topics pertinent to computer integrated design and manufacturing systems.

**MECG 7780** Selected Topics in Engineering Mechanics Cr.Hrs.3  
(Formerly 025.778) Lectures and seminars on selected advanced topics in engineering mechanics such as space dynamics, orbital mechanics and kineto-elastodynamics, current problems, implications in current research.

**MECG 7790** Transport Phenomena in Porous Media Cr.Hrs.3  
(Formerly 025.779) Single and multiphase flow in porous media. Porosity, permeability, capillary pressure, relative permeability, electrical properties.

**MECG 7800** Topics in Porous Media Cr.Hrs.3  
(Formerly 025.780) An extension of MECG 7790 (or 025.779) to allow investigation of special topics; e.g., computational methods, experimental techniques, mixed transport phenomena (diffusion/dispersion, conductive/convective heat transfer), advanced concepts, etc.

**MECG 7810** Computational Thermofluids Cr.Hrs.3  
(Formerly 025.781) An introduction to the solution of thermofluids problems. Computational techniques (finite difference, finite element, boundary element). Modelling of turbulent flow. Spectral methods.

**MECG 7830** Computational Mechanics Cr.Hrs.3  
(Formerly 025.783) Continuum Mechanics, Hyperelasticity, Theory of Plasticity, Finite element modelling of nonlinear problems and time-dependent material representation. Prerequisites: consent of instructor.

**MECG 7840** Systems Modelling and Simulation Cr.Hrs.3  
(Formerly 025.784) Topics may include: Models and Model Building. Mathematical Models: analytical solutions, numerical solutions, steady-state solutions. Modeling techniques: state models, linear graphs, bond graphs, transfer functions, large-scale models, linear vs nonlinear models. Simulation of Systems (discrete/continuous) on digital computers; numerical operations and algorithms. Simulation Languages (discrete/continuous) applied to analysis and design of dynamic and control systems, or, services and manufacturing systems. Prerequisite: consent of instructor.

**MECG 7850** Applied Finite Element Method Cr.Hrs.3  
(Formerly 025.785) Weighted Residuals, Boundary versus Finite Element Method, Conventional and Special elements, Equality and Inequality Constraints, Error Estimates, Self-adaptive Techniques and Mixed Formulations. Prerequisites: CIVL 4240 (or 023.424) or instructor approval.

**MECG 7890** M.Sc. Graduate Research Seminar Cr.Hrs.1  
(Formerly 025.789) Seminar presentation and discussion of current research topics in mechanical, industrial and materials engineering research.

**MECG 7900** Ph.D. Graduate Research Seminar Cr.Hrs.1  
(Formerly 025.790) Seminar presentation and discussion of current research topics in mechanical, industrial and materials engineering research.

**MECG 7910** System Design for Robots and Teleoperators Cr.Hrs.3  
(Formerly 025.791) Definitions and classification. Kinematics: transformations, forward and inverse kinematic solution methods, differential kinematic equations, motion trajectories. Dynamics: energy method vs. Newton-Euler formulation. Actuators; electric, hydraulics and pneumatics. Control: requirement and methods for control of robots and teleoperators. Prerequisites: MECH 3430 (or 025.343), MECH 3480 (or 025.348) or equivalent.

**MECG 7920** Engineering Mechanics of Composite Materials Cr.Hrs.3  
(Formerly 025.792) Brief overview of composites; constituents; properties; processing and application; micro-mechanics of reinforcement; elastic behaviour of unidirectional lamina; strength of unidirectional lamina; elastic behaviour of multi-directional laminates; stress and failure analysis of multidirectional laminates; hygrothermal effects and durability; introduction to textile composites.

**MECG 7930** Advanced Non-Linear Systems Analysis Cr.Hrs.3  
(Formerly 025.793) Topics may include (i) Modelling of Constrained Dynamic Systems, including derivation of dynamic equations for constrained systems using Lagrangian equations and/or Newton-Euler equations; (ii) Advanced Stability Theories, including construction of Lyapunov functions and Lyapunov's stability control; and (iii) Introduction to Analysis of Non-smooth Systems, including Filippov's solution analysis and extended Lyapunov's stability theory to non-smooth systems. Applications to computer modelling of bipedal locomotion, analysis of robotic contact tasks and stability analysis of power systems will be addressed.

**MECG 7940** Experimental Methods in Fluid Mechanics Cr.Hrs.3  
(Formerly 025.794) Topics will be chosen from: Review of fluid mechanics, combustion and turbulence theory; role of experiments; conventional measurement methods for temperature, pressure and velocity; laser-based techniques for local and global velocity measurements (Laser Doppler Anemometry (LDA), Phase-Doppler Anemometry (PDA), Particle Image Velocimetry (PIV)); other laser-based techniques for imaging and concentration measurements in reacting and non-reacting single and two-phase flows.

**MECG 7950** Selected Topics for Productivity Improvement in Manufacturing Cr.Hrs.3  
(Formerly 025.795) Will address techniques that can assist North American manufacturing and improve productivity in the global market place in the 21st century. Topics include: productivity techniques, quality, cost, manufacturing control and other pertinent issues.



## Medical Microbiology

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**Academic Staff:** Please refer to our website for academic staff

information: [http://www.umanitoba.ca/faculties/medicine/units/medical\\_microbiology/](http://www.umanitoba.ca/faculties/medicine/units/medical_microbiology/)

**The Department of Medical Microbiology offers programs of studies leading to the MSc and PhD degrees with research and academic experience suitable for a career in Basic Microbiology or Infectious Diseases.**

The department has nationally recognized strengths in several areas, particularly epidemiology. It also enjoys extensive collaborative projects with both the University of Kenya in Nairobi, Kenya, and with the new federal laboratories for disease research. The Nairobi project uses epidemiologic, biologic, and molecular biologic studies to better understand sexually-transmitted diseases in the African population. Similar studies are being instituted in India. Numerous opportunities for collaborative work with members of other departments as well as with various affiliated research organizations (including the Clinical Microbiology Laboratories of the Health Sciences Centre, the Infectious Diseases programs of the Health Sciences Centre, the Cadham Provincial Laboratory, the federal laboratories, and St. Boniface Hospital) exist.

Recent graduates of the program have been highly successful in academia, industrial, medical, and veterinary careers.

### Fields of Research

Scientific interests of the Department are broad and research projects range from the basic understanding of gene regulation and molecular basis of cellular functions to the development of vaccines and diagnostics for human health and veterinary diseases. The Department has active research programs in cell and molecular biology, immunology, virology, bacterial genetics, microbial pathogenicity, Chlamydial biology, and clinical microbiology. Many research projects are oriented to human diseases and many are carried out in collaboration with physicians who have access to patients.

### Research Facilities

Medical Microbiology occupies the 5th Floor of the Basic Medical Sciences Building on the Bannatyne Campus of the university and includes modern research laboratories. Teaching and research are also conducted within the Clinical Microbiology Laboratories of the Health Sciences Centre and within the infectious diseases programs of the Health Sciences Centre, National Research Council, Cadham Provincial Laboratory, St. Boniface Hospital, and the Canadian Science Centre for Human and Animal Health. The department's equipment, much of which is shared, supports research ranging from molecular biology to clinical microbiology. It includes ample biohazard containment facilities, controlled environment equipment, ultracentrifugation, spectrophotometric, chromatographic and electrophoretic equipment, a transmission electron microscope, fluorescent microscopes, liquid scintillation counters, personal computers and computer terminals for direct access to the main frame computer. A library and a number of other ancillary facilities are available.

### M.Sc. in Medical Microbiology, Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, graduates in Medicine, Dentistry, Veterinary Medicine, or general Science may apply for entry into this graduate program. The department requires that an incoming student have a minimum Grade Point Average of 3.0, or its equivalent, in the two years immediately preceding first registration. Students with a three-year B.Sc. degree must normally enrol in a pre-Master's course arranged in consultation with the Graduate Studies Committee and the head of the department.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the **Faculty of Graduate Studies** as follows:

Session	Start Date	Canadian/US	International
Regular	(September)	June 1	March 1
Winter	(January)	October 1	July 1
Spring	(May)	February 1	November 1
Summer	(July)	April 1	January 1

**Please note that the department is NOT responsible for finding supervisors for potential students. Applicants should visit the [department web page](#) for the list of faculty members and contact those with research areas of interest regarding availability of student positions.**

### Program Requirements

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

Second language reading requirement: none

Expected time to graduate: 2 - 3 years



### Ph.D. in Medical Microbiology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

### Application Deadlines

As listed above in Master's Program section.

### Program Requirements

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

Second language requirement: none

Expected time to graduation: 5 to 6 years

### Medical Microbiology -MMIC 6000 Level

**MMIC 6010** Biological Safety Cr.Hrs.3  
(Formerly 097.601) Critical Analysis of biological safety in the research, diagnostic and hospital environment; assessment of the underlying causes of laboratory acquired infections and the administrative, engineering and personal protective control measures available; analysis of current and new bio-containment technologies, risk assessment tools, the need for scientific based decision making and the public perception versus real risk.

### Medical Microbiology -MMIC 7000 Level

**MMIC 7010** Virology Cr.Hrs.6  
(Formerly 097.701) Fundamental properties of viruses of bacteria, animals and plants. Prerequisite: permission of instructor.

**MMIC 7040** Clinical Bacteriology Cr.Hrs.6  
(Formerly 097.704) Scientific basis of routine laboratory methods used in the diagnosis of bacterial infection: specimen handling techniques; laboratory organization.

**MMIC 7050** Microbial Pathogenicity Cr.Hrs.6  
(Formerly 097.705) Comparative structure of virulent and avirulent bacteria, biochemical basis of virulence; host defenses.

**MMIC 7140** Clinical Parasitology Cr.Hrs.3  
(Formerly 097.714) The course will consist of a series of lectures on the epidemiology, molecular pathogenesis, clinical features, diagnosis (clinical and laboratory), treatment and prevention of human disease; each class is followed by a laboratory period in which the student obtains some practical experience.

**MMIC 7160** The Molecular Basis of Antibiotic Action Cr.Hrs.3  
(Formerly 097.716) Historical development, mechanism of action, principles of antimicrobial susceptibility testing and molecular and genetic basis for antibiotic resistance transfer. Prerequisite courses include Microbial Physiology or Biochemistry and at least an introductory course in Genetics and the consent of instructor.

**MMIC 7170** Molecular Biology of Animal Viruses Cr.Hrs.3  
(Formerly 097.717) Lecture and conference course. Recent advances in molecular aspects of virus structure, replication, genetics, and spectrum of virus-host cell interaction. Prerequisites: MMIC 7010 (or 097.701), or consent of instructor.

**MMIC 7200** Host Defence Responses Cr.Hrs.3  
(Formerly 097.720) Aspects of the cellular responses during inflammation and infection. Topics will include inflammatory cell function, mechanisms of cell accumulation and activation, roles of cytokines in these processes. Selected examples will be discussed in detail. The course will involve some student presentations.

**MMIC 7210** Clinical Virology Cr.Hrs.3  
(Formerly 097.721) Overview of the association between viruses and human diseases; biology of host and virus interaction and role of immune system to control infection; understanding the role of laboratory services and patient management; create appreciation for role of molecular-based diagnostic methods in the detection of new human pathogens. Lecture/laboratory components.

**MMIC 7220** The Ecology of Infectious Diseases Cr.Hrs.6  
(Formerly 097.722) Explores the study of infectious diseases in a global context from the perspective of biomedical, clinical, health systems/services and social, cultural and environmental determinants of health and disease. The course features didactic, self-directed reading and interactive small group sessions.

## Medical Rehabilitation

**Head:** Brian MacNeil

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**Academic Staff:** Please refer to our website for academic staff information: [umanitoba.ca/medrehab/mscience](http://umanitoba.ca/medrehab/mscience)

The School of Medical Rehabilitation currently offers an M.Sc. (Rehabilitation) degree program. The purpose of this program is to conduct and promote basic and clinical research in the prevention and rehabilitation fields. The research conducted at the School of Medical Rehabilitation can be framed within the International Classification of Function. This framework emphasizes the interactions between body structures and functions, the ability to perform various activities, and participation in society.



The diverse research programs and facilities of the School offer opportunities for graduate education in the areas of neuroscience, cardiorespiratory function, exercise physiology, musculoskeletal function, and human occupation. Through proximity to a range of clinical settings and strong collaborative links the program offers particular opportunities to engage in clinically relevant research. Graduates of this program have gone on to advanced clinical practice and administrative positions within the health care system. In addition, graduates have also pursued research careers through various doctoral programs including the PhD in Applied Health Sciences program.

### Fields of Research

The School has several diverse but complimentary programs of research in the areas listed above which are directed to: assessing outcomes of therapeutic interventions by single centre clinical trials; furthering understanding of the physiological basis of current rehabilitation clinical practice; developing new strategies to restore function or to substitute for functional losses, as well as to improve mobility and enhance physical adaptation to functional losses; developing new strategies to manage functional impairment; developing rehabilitation-related interventions to minimize secondary impairments and promote life long health; developing innovative rehabilitation interventions, including novel physical therapies and rehabilitation engineering products; and understanding the mechanisms of workplace injury, developing strategies to prevent injury and decrease morbidity consequent to work-related injury developing interventions for primary prevention of disease related to physical inactivity.

### Research Facilities

The School of Medical Rehabilitation is located at the Bannatyne Campus in downtown Winnipeg. This campus is adjacent to the Health Sciences Centre, a major teaching hospital complex, with rehabilitation-related facilities for pediatric, adult and geriatric patients including physiotherapy, occupational therapy, rehabilitation engineering, prosthetics and orthotics. The school has a number of world-class research laboratories conveniently located in the Rehabilitation Hospital of the Health Sciences Centre and the Bannatyne Campus of the University of Manitoba.

### M.Sc. (Rehabilitation), Admission

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, admission requirements include a baccalaureate degree in Physical Therapy, or Occupational Therapy, or Respiratory Therapy, or a baccalaureate degree in an area related to rehabilitation, and an academic record which meets the entrance requirements of the Faculty of Graduate Studies.

### Application Deadlines

The School of Medical Rehabilitation allows students to begin their program on either September 1 or January 1. For admission for each of these start dates, Canadian/U.S. students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than three (3) months before the intended start date. Non-Canadian students should send their applications with complete supporting documentation to the Faculty of Graduate Studies to arrive no later than six months (6) before the intended start date.

### Program Requirements

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

Second language reading requirement: None

Expected time to graduate: Two years

### Ph.D. (Applied Health Sciences),

The School of Medical Rehabilitation, along with the Faculty of Physical Education and Recreation Studies, Faculty of Human Ecology, and Faculty of Nursing, offers a multi-faculty Ph.D. in Applied Health Sciences. Information on this program may be found in another section of this calendar.

### Medical Rehabilitation

#### REHB 7010 Neurosciences Cr.Hrs.3

(Formerly 068.701) To provide the student with a comprehensive understanding of the neurophysiological basis of motor behaviour including: motor control mechanisms, pathophysiological correlates, and clinical manifestations of central nervous system lesions involving motorcentres.

#### REHB 7050 Ergonomics Cr.Hrs.3

(Formerly 068.705) This course shall examine the basic tenet of ergonomics, "the modification of the environment to meet the needs of the individual," and contrasted to "the adaptation of the individual to meet the constraints of the environment."

#### REHB 7060 Gerontology Cr.Hrs.3

(Formerly 068.706) Designed to increase knowledge and understanding of geriatric/gerontology research related to the biological, physical, psychological and sociological health and function of older adults in society. A particular focus will be on social cognition and the role of perceived control in the rehabilitation of older adults.

#### REHB 7070 Exercise Rehabilitation for Persons with Disabilities Cr.Hrs.3

(Formerly 068.707) The student shall acquire a better understanding and increased knowledge of: the application of endurance exercise testing and training principles with disabled individuals; and the practical application of these skills.

#### REHB 7130 Advanced Ergonomics Cr.Hrs.3

(Formerly 068.713) This course is designed to enhance the



student's understanding and application of ergonomic principles in the clinical setting. The student will choose from a selected list of current ergonomic topics and will research this topic under the guidance of the supervisor. The research will be formally presented at the end of the course.

**REHB 7160** Rehabilitation Research Techniques Cr.Hrs.3 (Formerly 068.716) Introduction to techniques used in rehabilitation research including bioelectrical signal recording such as electro-myography, strength assessment using isovelocity dynamometry, acquisition, processing and storage of experimental data.

**REHB 7170** Topics in Rehabilitation Cr.Hrs.3 (Formerly 068.717) A readings, tutorial and practical course designed to enhance the student's knowledge of basic science and clinical investigations and to provide experience in the logical development of approach to a problem.

**REHB 7180** Readings in Rehabilitation Cr.Hrs.3 (Formerly 068.718) Readings course covering recent advances in an area of rehabilitation related to a student's field of research.

**REHB 7190** Structure and Function of the Musculoskeletal System Cr.Hrs.3 (Formerly 068.719) Tutorial and laboratory course providing in-depth study of the structure and function of a specific musculoskeletal region pertinent to rehabilitation. Synthesis of subject material in anatomy, physiology, biomechanics, pathology and rehabilitation. Prerequisites: REHB 1450 (or 068.145), REHB 1460 (or 068.146), REHB 1530 (or 068.153) or REHB 2890 (or 068.289), and REHB 3470 (or 068.347) or equivalent courses.

**REHB 7200** Dynamometry Cr.Hrs.3 (Formerly 068.720) A comprehensive study of dynamometry and the use of dynamometers for the assessment of strength, endurance and passive properties of soft tissues.

**REHB 7210** Dynamics I Cr.Hrs.3 (Formerly 068.721) To understand the relationship between neuro-physiological and biomechanical factors in the production of functional multi-segmented motion in clinical motor disorders encountered in medical rehabilitation.

**REHB 7220** Dynamics II Cr.Hrs.3 (Formerly 068.722) This course is designed to enhance the student's understanding and application of biomechanical principles to the clinical setting. The student will choose from a selected list of current kinesiological topics and will research this topic under the guidance of the supervisor. The research will be formally presented at the end of the course. Prerequisite: REHB 7210 (or 068.721).

**REHB 7230** Independent Study Cr.Hrs.6 (Formerly 068.723) Students complete an in-depth study of evidence for practice in an area of interest. Students will work with an assigned faculty advisor to define and evaluate a particular area of interest in rehabilitation practice, particularly in occupational or physical therapy.

**REHB 7240** Theoretical Foundations of Occupational Therapy Cr.Hrs.3 (Formerly 068.724) An in-depth study of the theory base in Occupational Therapy. The focus of the course is models of occupation and their impact on occupational therapy

practice. Prerequisite: Previous degree in Occupational Therapy.

**REHB 7250** Facilitating Client-Centred Processes Cr.Hrs.3 (Formerly 068.725) Theory and practical course designed to develop an advanced understanding of the principles of client-centered practice. The course will focus on the development of the requisite knowledge, skills and attitudes to evaluate and implement client-centered approaches and facilitate environments conducive to client-centered practice. Prerequisite: Consent of instructor

**REHB 7260** Assistive Technology Cr.Hrs.3 (Formerly 068.726) A theory and practice course designed to develop an advanced understanding of the application of technology for individuals with disabilities as a means to occupation. Particular emphasis will be on evaluating the impact and understanding the theory guiding the use of assistive technology, and developing an understanding of the contexts in which assistive technologies are used.

**REHB 7270** Pain and Rehabilitation Cr.Hrs.3 (Formerly 068.727) Designed to enhance the student's knowledge of basic science and clinical investigations related to pain, as well as the clinical relevance of pain transmission and modulation in rehabilitation. The course is delivered in small group tutorial format to facilitate student interaction and exchange of information.

## Microbiology

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Microbiological research is one of the most dynamic areas of scientific endeavour. Concern over the impact of society's activities on the environment is increasing and there is a strong need for research in environmental microbiology. Biotechnology, molecular genetics, and biochemistry show tremendous promise in many areas of medicine, agriculture, industry and basic microbiological research. Technological advances are continually expanding in these areas of research. They all depend heavily on basic research and a supply of highly trained individuals. Graduates from the microbiology department take up positions in industry, universities, and the public sector. The demand for these graduates continues to be high.

### Fields of Research



The department offers M.Sc. and Ph.D. programs of study. The research interests of the faculty and students are concentrated in several main areas: microbial ecology and geochemistry; molecular biology/genetics; metabolism of autotrophic bacteria; microbial biotechnology and biochemistry; microbial pathogenicity.

#### Research Facilities

Microbiology program faculty members are engaged in active research projects. The department has all the facilities needed to conduct research in areas of specialization and the inventory of modern equipment is one that would be expected in any active research unit. In addition, close ties with other departments allow for the use of their facilities.

#### M.Sc. in Microbiology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

#### Application Deadlines

Application and supporting documentation are submitted to the Faculty of Graduate Studies. International students must submit this material at least 5 months before their intended starting date, i.e. April 1<sup>st</sup> for September start, August 1 for January start; December 1 for May start and February 1 for July start. Canadian and U.S. students should submit two months in advance.

#### Program Requirements

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar and the departmental supplementary regulations.

Second language reading requirement: none

Expected time to graduate: 2 - 3 years

#### Ph.D. in Microbiology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

#### Application Deadlines

Application and supporting documentation are submitted to the Faculty of Graduate Studies. International students must submit this material at least 5 months before their intended starting date, i.e. April 1<sup>st</sup> for September start, August 1 for January start; December 1 for May start and February 1 for July start.

July start. Canadian and U.S. students should submit two months in advance.

#### Program Requirements

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar and the departmental supplementary regulations.

Second language requirement: none

Expected time to graduation: 4 - 6 years

### Microbiology

**MBIO 7010** Graduate Seminar in Microbiology 1 Cr.Hrs.3 (Formerly 060.701) Seminars covering areas of interest to the faculty and students in the graduate Microbiology programme, and current developments in the broad field of microbiology (including microbial physiology, environmental microbiology, virology, pathogenicity, genetics, molecular biology, biochemistry, biotechnology, and cell culture). Open to all qualified students by permission of the Microbiology department head.

**MBIO 7020** Graduate Seminar in Microbiology 2 Cr.Hrs.3 (Formerly 060.702) Seminars covering areas of interest to the faculty and students in the graduate Microbiology program, and current developments in the broad field of microbiology (including microbial physiology, environmental microbiology, virology, pathogenicity, genetics, molecular biology, biochemistry, biotechnology, and cell culture). Open to all qualified students by permission of the Microbiology department head.

**MBIO 7030** Graduate Seminar in Microbiology 3 Cr.Hrs.3 (Formerly 060.703) Seminars covering areas of interest to the faculty and students in the graduate Microbiology programme, and current developments in the broad field of microbiology (including microbial physiology, environmental microbiology, virology, pathogenicity, genetics, molecular biology, biochemistry, biotechnology, and cell culture). Open to all qualified students by permission of the Microbiology department head.

**MBIO 7040** Graduate Microbiology Cr.Hrs.3  
Topics and current developments in the field of microbiology will be covered. A combined discussion, seminar and written exam format may be used. Inquire at the department for availability.

**MBIO 7050** Environmental Microbiology Cr.Hrs.3  
Topics and current developments in the field of environmental microbiology will be covered. A combined lecture, discussion, assignment and seminar format may be used. Inquire at the department for availability.

**MBIO 7060** Microbial Interactions Cr.Hrs.3  
Topics and current developments in the field of microbial interactions will be covered. A combined discussion, seminar



and written exam format may be used. Inquire at the department for availability.

**MBIO 7070** Bioprocessing Cr.Hrs.3

This course allows students with a background in either biological sciences or engineering to gain an understanding of biochemical engineering processes used to enable important chemical conversions by biological systems. Topics include bioprocessing for production of biofuels, bioplastics, and biopharmaceuticals, upstream processing technologies, fermentation and bioreactor systems, and downstream processing for product recovery. These will be related to present or potential industrial applications. This course is also offered in the Department of Biosystems Engineering as BIOE 7180. MBIO 7070 cannot be held with BIOE 7180.

**MBIO 7080** Biochemical Mechanisms Cr.Hrs.3

(Formerly 060.708) A treatment of current concepts of biochemical mechanisms in selected areas of investigation, including multifunctional enzyme complexes and membrane-associated systems. Prerequisite: consent of instructor. Inquire at the department for availability.

**MBIO 7090** Biological Oxidations and Bioenergetics Cr.Hrs.3

(Formerly 060.709) A treatment of current concepts of biological oxidations, and bioenergetics in microorganisms including autotrophic bacteria. Inquire at the department for availability.

**MBIO 7100** Advanced Concepts in Molecular Biology Cr.Hrs.3

(Formerly 060.710) Recent advances in the molecular basis and control of gene activity; information transfer and molecular evolution. Inquire at the department for availability

**MBIO 7110** Advances in Microbial Genetics Cr.Hrs.3

(Formerly 060.711) Developmental genetics; recombination; bacteriophages; fine structure analysis; biochemical genetics and specialized genetic systems. Inquire at the department for availability

**MBIO 7130** Advanced Physiology of Bacteria Cr.Hrs.3

(Formerly 060.713) An assignment and conference course. Selected topics covering recent advances in the energy relationships of bacteria and the growth and death of bacteria. Inquire at the department for availability.

**MBIO 7160** Special Problems in Microbiology Cr.Hrs.3

(Formerly 060.716) An assignment and conference course to be taken only through consultation with the head of the department. The topics will vary, depending upon student needs and interests, and will include specialized topics not available in regular course offerings.

**MBIO 7170** Current Topics in Mammalian Cell Culture Cr.Hrs.3

(Formerly 060.717) A lecture and discussion course based on current research problems involving mammalian cells in culture. Prerequisite: consent of instructor. Inquire at the department for availability.

**MBIO 7190** Microbial Ecology Cr.Hrs.3

(Formerly 060.719) Topics and current developments in the field of microbial ecology will be covered with emphasis on aquatic ecosystems. A combined lecture, discussion, and

seminar format will be used. Inquire at the department for availability.

**MBIO 7200** Macromolecular Structure Analysis Cr.Hrs.3

This course introduces the principles of X-ray crystallography as applied to the study of protein and nucleic acid structure. Protein crystallization and practical aspects of X-ray diffraction, structure determination and analysis are covered. This course is suitable for students with a background in microbiology, biochemistry or chemistry. Inquire at the department for availability.

## Music

Marcel A. Desautels Faculty of Music

**Dean:** Edmund Dawe

**Associate Dean(s):** Joan E. Linklater

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**Academic Staff:** Please refer to our website for academic staff information: <http://umanitoba.ca/music/staff/>

The Marcel A. Desautels Faculty of Music offers a Master of Music (M.Mus.) in three major areas: performance, composition and conducting. The emphasis is upon full professional preparation in a strong academic context. Students in the string component of the program are eligible for adjunct training by a special agreement with the Winnipeg Symphony Orchestra. Students in the voice component are eligible to be considered for training and solo professional activities with Winnipeg operatic companies, choral organizations and chamber groups. Students in the collaborative piano component are eligible to be considered for training with Winnipeg operatic companies and choral organizations or with professional chamber ensembles.

### Fields of Creative Work and Research

The Faculty fosters an active, integrated performance environment which provides the broadest possible professional training. This is complemented by a program of research in musicology, ethnomusicology, jazz, music theory and related fields. Students with interests outside of the M.Mus. have the option of pursuing advanced studies in music via the Individual Interdisciplinary Program (IIP) of the Faculty of Graduate Studies.

### Research Facilities

Of particular interest to students in the M.Mus. (composition) is our Electroacoustic Music Studio. Our library resources support a wide variety of performance studies in various historical eras.



### Master of Music Admission

Admission requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Persons who have completed (1) a four-year undergraduate degree program in music with a minimum 3.0 GPA in the last two full years or (2) a conservatory diploma which is offered in residence, may apply for admission to the M.Mus. program.

### Application Deadlines

All applications should be sent to the Faculty of Graduate Studies on or before December 10th to begin study in September, or June 15th for a January start date.

Application procedures vary, according to the area of desired study; please see our website for detailed information

<http://umanitoba.ca/music> under "Prospective Students".

- Performance applicants will perform an audition and will submit a curriculum vitae which includes details of performance experience and repertoire. Except in special circumstances, the audition will be in person, at the Marcel A. Desautels Faculty of Music. String players wishing to apply for the Winnipeg Symphony Orchestra partnership will be required to perform a separate audition according to the standard procedures of the W.S.O.
- Composition applicants will present a portfolio of works and will submit a curriculum vitae detailing experience in both the areas of composition and in the field, in general. Instrumental submissions should include both scores and recordings.
- Conducting applicants will present a current curriculum vitae, a preliminary DVD, a list of repertoire they have conducted and an analysis of a specified piece of music.

### Diagnostics

Students admitted to the Master of Music program at the University of Manitoba are expected to possess a certain breadth and depth of knowledge of music theory. To help ensure this, all incoming graduate students will be given diagnostic examinations to evaluate their knowledge of the theoretical aspects of tonal and post-tonal music. These diagnostic examinations will normally be given during the week preceding the first week of classes in the Fall. The material on these examinations will correspond to that studied in our undergraduate courses in music theory. Details of suitable review materials will be mailed to all incoming graduate students, and are also available on our website or by request from the music office.

Incoming graduate students who do not achieve satisfactory results on any portion of these tests may be required to do remedial work as a co-requisite or pre-requisite to their graduate program; such work, in the form of course or other requirements, will not count for credit toward the Master of

Music degree. Since remedial coursework may be specified as a pre-requisite to a required graduate course, incoming graduate students will not be permitted to register for courses in the Faculty of Music until these diagnostics exams have been taken.

### Program Requirements

The Faculty offers three program areas leading to the M.Mus. As part of each program, all M.Mus. students are required to take: MUSC 7000, MUSC 7050, MUSC 7110, MUSC 7180, MUSC 7400, MUSC 7410 and complete program requirements for areas of study, as follows:

### Second Language Reading Requirement:

Reading knowledge of one language other than English is required. The language required will normally be French, German or Italian. Other languages will be accepted if more appropriate to the student's program. The specific requirement will be determined in consultation with the student's committee. This requirement may be met through one of the following:

- Evidence of the completion of an undergraduate language course at the 1000 level or above in the five years preceding acceptance into the program.
- The translation, using a dictionary, of a passage in the major area of study.
- Completion of a course at the 0900 or higher level after registration in the Masters Degree program.
- Determination by the student's committee that the requirement has been met through previous education and/or experience.

M.Mus. in Performance,  
Electives: 6 credit hours

(String students participating in the Winnipeg Symphony Orchestra will take one Topics in Music course (3CH) in Orchestral Performance.)

Total: 24 credit hours

The Performance thesis/practicum requires either: (a) one recital, normally consisting of solo repertoire, accompanied by a paper which provides historical or analytical program annotation; or (b) two recitals, one of which is solo repertoire and the other of which may include solo and ensemble repertoire. No paper is required under option (b).

A proposal for this project will be developed by the student in consultation with the Major Practical Study instructor and must be approved by the student's committee. The committee will consider the stylistic and technical appropriateness of the program in its adjudication.

M. Mus. in Conducting,  
Electives: 6 credit hours



Total: 24 credit hours

The Conducting thesis/practicum requires a significant repertoire of performance which is chosen, rehearsed, scheduled and conducted by the student. The performance of this body of work will be accompanied by historical or analytical program annotation.

A proposal for this project will be developed by the student in consultation with the conducting instructor and must be approved by the student's committee. The committee will consider the stylistic and technical appropriateness of the repertoire in its adjudication.

Expected Time to Graduate: Two years.

### **M. Mus. in Composition,**

Electives: 3 credit hours

Total: 24 credit hours

The Composition thesis/practicum requires the production of a substantial body of work accompanied by a significant analytical paper which explains the structure of the piece(s) and the compositional processes. Normally, a performance of the piece(s) is required.

A proposal for this project will be developed by the student in consultation with the composition instructor and must be approved by the student's committee. The committee will consider the extent of the performance forces, the proposed length and the technical requirements of the body of work in adjudicating appropriateness.

Ph.D. in Music,

The Faculty of Music does not offer a Ph.D. Program at this time.

## **Music**

### **MUSC 7000** Music History Seminar Cr.Hrs.3

(Formerly 033.700) The study of the nature of past and current concepts and practices in the discipline of music history

### **MUSC 7050** Bibliography and Research Methods Cr.Hrs.3

(Formerly 033.705) The techniques of bibliography and research methods in music are studied through research projects in selected areas relevant to each student's major field of study. Skill is developed in the use of primary and secondary sources, expository writing and documentation

### **MUSC 7060** Advanced Diction 1 Cr.Hrs.1

(Formerly 033.706) Advanced training in rules of pronunciation, language use and translations skills in Italian and German. Lab Required.

### **MUSC 7070** Advanced Diction 2 Cr.Hrs.1

(Formerly 033.707) Advanced training in rules of pronunciation, language use and translations skills in French and English. Lab Required.

### **MUSC 7110** Music Theory Seminar Cr.Hrs.3

(Formerly 033.711) A comprehensive survey of 20th century analytical methodologies of tonal and post-tonal music.

### **MUSC 7180** Ensemble Cr.Hrs.3

(Formerly 033.718) Studio instruction and monitored pre-professional training activities in chamber music leading to the presentation of ensemble performance.

### **MUSC 7380** Piano Repertoire Seminar Cr.Hrs.2

(Formerly 033.738) Advanced study of the repertoire for solo piano up to the early 20th century.

### **MUSC 7390** Piano Chamber Music Literature

Seminar Cr.Hrs.2

(Formerly 033.739) Advanced survey of piano chamber music.

### **MUSC 7400** Major Practical Study 1 Cr.Hrs.3

(Formerly 033.740) Private studio instruction and monitored pre-professional training activities in one of the following: composition, conducting, or any one of the standard instruments or voice.

### **MUSC 7410** Major Practical Study 2 Cr.Hrs.3

(Formerly 033.741) A continuation of Major Practical Study 1.

### **MUSC 7490** Advanced Piano Pedagogy Cr.Hrs.2

(Formerly 033.749) Consideration of advanced approaches to the teaching of styles and techniques through an examination of piano repertoire.

### **MUSC 7520** Coaching Skills Cr.Hrs.2

(Formerly 033.752) Advanced training in philosophies and techniques of vocal coaching including both song and operatic repertoire.

### **MUSC 7530** Operatic Piano Cr.Hrs.2

(Formerly 033.753) Development of skills required of an operatic pianist, including standard Arias, operatic scores, working with conductors and developing orchestral sound. May include participation in community opera events (by audition only).

### **MUSC 7600** Advanced Orchestration Cr.Hrs.3

(Formerly 033.760) Advanced practical work in orchestration for various-sized large ensembles up to and including full orchestra. Detailed study of selected scores and work on individual orchestration projects.

### **MUSC 7630** 20th to 21st Century Piano Repertoire Cr.Hrs.2

(Formerly 033.763) Advanced study of piano repertoire since 1900.

### **MUSC 7810** Electroacoustic Music Cr.Hrs.3

(Formerly 033.781) A study of the techniques of electroacoustic music.

### **MUSC 7860** Topics in Music Cr.Hrs.3

(Formerly 033.786) Course orientation will vary according to the needs and interests of students. A specific topic will be



chosen for each offering of the course.

## Native Studies

**Head:** Renate Eigenbrod

**Campus Address/General Office:** 204 Isbister Bldg

**Telephone:** (204) 474 9899

**Fax:** (204) 474 7657

**Email Address:** [native\\_studies@umanitoba.ca](mailto:native_studies@umanitoba.ca)

**Website:** [http://umanitoba.ca/native\\_studies](http://umanitoba.ca/native_studies)

**Academic Staff:** Please refer to our website for academic staff information: [http://umanitoba.ca/native\\_studies](http://umanitoba.ca/native_studies)

The graduate program in Native Studies offers students the opportunity to complete the advanced study (M.A.) of issues relating to Aboriginal peoples in a manner that reflects their commitment to the Aboriginal community and sensitivity to Aboriginal perspectives. The core nature of the Master's of Arts in the Native Studies program at the University of Manitoba is based on a notion of the inherent interdisciplinary nature of the field of Native Studies. This program is rooted in a unique position between Aboriginal and Western worldviews; it fosters a broad understanding of Aboriginal issues in the university community and beyond. The graduate program in Native Studies is committed to the principles of academic excellence, inclusivity, creativity, and leadership in the field of Native Studies.

A high degree of interaction occurs between faculty members and graduate students because of the small size of the program. While in the program, graduate students have opportunities such as: presenting their research at conferences; publishing in refereed journals; celebrating Aboriginal scholarship; and competing for awards, bursaries, scholarships and fellowships. Graduates from this program work at a wide range of jobs in private industry, government agencies, Aboriginal organizations, education, health, environment, management, and other related fields.

### Fields of Research

Areas of expertise in Native Studies at the University of Manitoba which are readily available to graduate students include: Indigenous literatures, urban issues, women's issues, culture (history, material culture, contemporary issues), self-government and land claims, economic development (including sustainable formal and informal economies), the environment, Métis studies, Inuit studies, Aboriginal identity, resource management, wildlife management, political science, law, education, Aboriginal wisdom and Aboriginal ways of knowing, traditional ecological knowledge, critical theory, colonization, ethics, and other related fields.

### Research Facilities

Students access research facilities including: Churchill Northern Studies Centre, Hudson's Bay Company Archives, St. Boniface Métis Museum collection, Museum of Man and

Nature collection, and facilities in First Nations, Inuit, and Métis communities.

### Master's of Arts in Native Studies, Admission

For students to be admitted directly into the Master's program, they are required to have the equivalent of an advanced/honours degree with a major in Native studies. Students with majors in other fields may apply if they have 30 credit hours in courses relating to Indigenous/Aboriginal/Native studies. Students who do not meet this equivalency will be required to take additional courses to meet the requirement for 30 credit hours of Native Studies courses.

### Application Deadlines

The department accepts applications for the Winter (January) and Regular (September) Terms only. The deadlines for submission of an application and supporting documentation to the Faculty of Graduate Studies are as follows:

Winter (January)	September 15
Regular (September)	March 15 – Canadian citizens January 15 – International students

### Program Requirements

The program requirements include twelve credit hours of required and six credit hours of additional course work at the 4000 level or above for a total of 18 credit hours. A thesis is also required. Students should consult the Supplementary Regulations, available through the Native Studies Graduate Office, for more details regarding requirements.

Twelve credit hours must include NATV 7230 Methodology and Research Issues in Native Studies; NATV 7240 Issues in Colonization; NATV 7250 Culture: Theory and Praxis; and NATV 7280 Native Studies Colloquia (3 terms). NATV 7220 Selected Topics in Native Studies may be taken more than once.

Second Language Reading Requirement: none

Expected Time to Graduate: two years

### Ph.D. in Native Studies,

Students in the field of Native Studies prepare individual interdisciplinary program proposals and may apply for admission into the Individual Interdisciplinary PhD programs. It is anticipated that the Native Studies Department will have received approval for its own Ph.D. program shortly.

Second Language Requirement: 6 credit hours P/F in any Indigenous language

Expected Time to Graduate:



## Native Studies

**NATV 7220** Selected Topics in Native Studies Cr.Hrs.3  
(Formerly 032.722) A critical examination of issues in selected areas of Native Studies designed to meet the special needs of graduate students interested in exploring interdisciplinary perspectives in Native Studies. Prerequisite: consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**NATV 7230** Methodology and Research Issues in Native Studies Cr.Hrs.3  
(Formerly 032.723) A review of research methods, such as oral histories, and research issues, such as ethics and intellectual property rights, within the context of Native Studies. Prerequisite: consent of instructor.

**NATV 7240** Issues in Colonization Cr.Hrs.3  
(Formerly 032.724) An examination of the factors influencing colonization, assimilation and indigenization. Explores the colonization and decolonization processes, theories of colonization and ways of promoting indigenization without assimilation.

**NATV 7250** Culture: Theory and Praxis Cr.Hrs.3  
A study of selected material in Métis, Aboriginal, or Inuit studies, designed to meet the special needs of graduate students interested in exploring interdisciplinary perspectives in Native Studies. Prerequisite: consent of instructor.

**NATV 7280** Native Studies Colloquia Cr.Hrs.1  
(Formerly 032.728) Theoretical, methodological, ethical and contextual issues in Native Studies are explored from the perspectives of formally and informally trained experts using a colloquia format. Students are required to attend regularly. This course is taken more than once to fulfil program requirements. Time slots to be determined the first week of September (Pass/Fail). As the course content will vary from year to year, students may take this course more than once for credit.

**NATV 7290** Seminar in Aboriginal Economy Cr.Hrs.3  
This seminar deals with a variety of specific topics in Aboriginal Economy. As the course content will vary from year to year, students may take this course more than once for credit.

**NATV 7310** Critical Theory and Native Studies Cr.Hrs.3  
This course will assess the relevance of the concepts produced by recent social theory to the situation of Aboriginal peoples and the contribution made by "fourth world" contexts to social theory. Marxism, feminism, post-structuralism, post-colonial theory, and cultural theory will be among the perspectives examined.

**NATV 7320** Trauma Theory in Indigenous Writing in Canada and Australia Cr.Hrs.3  
This course will compare selected texts by Indigenous authors from Canada and Australia as trauma literature. The respective texts will be analyzed with the help of trauma theories as developed in relation to the Holocaust. Prerequisite: written consent of instructor.

## Natural Resources Management

Natural Resources Institute

**Program Director:** Dr. Michael Campbell

**Campus Address/General Office:** 303 Sinnott Building

**Telephone:** (204) 474-8373

**Fax:** (204) 261-0038

**Email Address:** [nriinfo@umanitoba.ca](mailto:nriinfo@umanitoba.ca)

**Website:** [http://umanitoba.ca/institutes/natural\\_resources](http://umanitoba.ca/institutes/natural_resources)

**Academic Staff:** Please refer to our website for academic staff information: [http://umanitoba.ca/institutes/natural\\_resources](http://umanitoba.ca/institutes/natural_resources)

The Natural Resources Institute (NRI) is one of the pioneering academic units in Canada active in natural resources and environmental management research and teaching. As such, it has contributed to the training of over 800 academics, professionals, administrators, and practitioners who are now active in the natural resources and environment fields in Manitoba and throughout the world, in both the public and private sectors.

The institute's academic activities are interdisciplinary and are focused upon local and global problem solving linked to the strength and expertise of faculty members and the interests of students. Full-time faculty work closely with an outstanding cadre of adjunct professors from other university disciplines, from the universities of Brandon and Winnipeg, from several government departments (such as the Canadian Department of Fisheries and Oceans and the Manitoba Department of Conservation), as well as from non-governmental agencies and the private sector.

Natural resources and environmental policy and decision-making provide the context for most academic activities. NRI is noted for the identification of novel approaches to establish the necessary linkages between the environment, economy, and the social well being of people. Thus, the institute uses a three-dimensional approach to natural resources and environmental policy and decision-making as it continues to search for innovative solutions that will be good for the environment as well as for poverty alleviation.

This holistic interdisciplinary approach is pursued in teaching, research and outreach. The institute's strength and expertise cut across a number of resource fields; human dimensions of natural resources management; natural resources policy; institutions, decision-making processes; water resource management; environmental governance; environmental hazards and risk assessment; climate change impact and adaptation; community based resource management; traditional ecological knowledge; habitat, wildlife, and ecological management and multi-stakeholder processes/public involvement; and conservation of biodiversity.

Institute faculty and students continue to make contributions to resources management locally, nationally and internationally. Locally: City of Winnipeg waste management; province of Manitoba water strategic plan; province of



Manitoba sustainable development (SD) initiatives; wildlife habitat with Ducks Unlimited and Delta Waterfowl. Nationally: First Canadian national hazards research assessment; coastal zone management work, monitoring of project impacts; review of Canadian Environmental Assessment Act (CEAA). International: impacts of urban development in high mountains in northern India; co-management of resources in Costa Rica, Bangladesh, Turkey, Stewardship initiatives in the EU, in particular, in Germany; building environmental governance capacity in Bangladesh; international disaster prevention and mitigation; sustainable floodplain management in Bangladesh and Canada. The institute is the focal point at the University of Manitoba for interdisciplinary education, research, and outreach in resources and environmental issues. In the latter context the institute sees itself as having a major responsibility to the University of Manitoba, the City of Winnipeg and to the Province of Manitoba in the solution of problems involving natural resources and the environment. Institute staff takes their obligation to assist in the solution of global problems just as seriously.

The master's program in natural resources management combines a broad commitment to sustainability with development of well-focused, practical expertise in natural resources management. The program recognizes that pursuit of sustainability requires attention to ecological, economic, and social issues at all levels -from the local to the global. But it also expects that most gains are made through specific practical management application. Therefore, the program is designed around two main elements: an interdisciplinary examination of sustainability concerns and defined management project examinations undertaken in this broader context.

The doctoral program is aimed at developing independent researchers in the areas of natural resources and the environment. Students enter the program from a variety of academic backgrounds and disciplines.

#### Fields of Research

NRI's graduate programs are interdisciplinary, responding to the need to educate professionals in integrative thinking and problem solving. The programs cut across conventional disciplinary lines to emphasize linkages between social and natural systems, environmental policy and decision-making. The research is focused on integrating the environment with the economy and the well being of people. Research areas include resource and environmental sustainability; environmental governance; environmental hazards and risk assessment; water resource management; climate change impact and adaptation; community-based resource management; wildlife habitat and landscape ecology; northern resources and development, ecosystem management, conservation of biodiversity, and multi-stakeholder planning and decision-making.

#### Research Facilities

Facilities on site include a fully equipped computer laboratory with appropriate software. Many of the NRI's interdisciplinary research projects are carried out jointly with a variety of agencies in various locations. Recent projects

include those with Manitoba Conservation, Manitoba Hydro, Manitoba Model Forest, the City of Winnipeg, Fisheries and Oceans Canada—Central and Arctic Region, Parks Canada, Ducks Unlimited, and the International Institute for Sustainable Development. A significant number of NRI projects are carried out cooperatively with First Nations and many are completed overseas with a variety of international agencies. For those research projects requiring physical facilities, students and faculty have access to the Delta Marsh Field Station, the Fort Whyte Centre and the Experimental Lakes Area of Fisheries and Oceans Canada.

#### Master of Natural Resources Management , Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

#### Application Deadlines

Session	Start Date	Canadian/U.S.	International
Regular	(September)	June 1	February 1
Winter	(January)	October 1	July 1
Summer	(May)	February 1	November 1

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students in the Master's program follow an individual study plan that includes 12 credit-hours of required courses, a minimum of 15 credit-hours of elective courses and a Master's thesis.

The central academic agenda of the required set of courses includes: Assessment of the theoretical foundations and practical applications of progress toward sustainable management of natural resources; understanding of ecosystems as self-organizing and responding systems; examination of conventional and alternative social arrangements, including institutions and tools of governance, as a means of improving human well-being and environmental responsibility; and exposure to theories of resource and environmental management processes and tools.

Second language reading requirement: none

Expected time to graduate: two years

#### Ph.D. in Natural Resources and Environmental Management,

This program provides studies in the environment and natural resources through a holistic and interdisciplinary approach. Students' programs and research will prepare them to pursue independent research aimed at solving the complex issues facing the world environment learning about varied approaches and using a variety of tool and methods.



A hallmark of the program is the collaboration with other University of Manitoba academic units and other Manitoba universities through an extensive cadre of adjunct professors and cross-appointments. This cadre is further strengthened by the appointment of adjunct professors from a variety of agencies external to the University of Manitoba, including the Freshwater Institute, the International Institute for Sustainable Development, Delta Waterfowl, and Ducks Unlimited, to name a few.

### Admission

Admission to the program is as in the Faculty of Graduate Studies Regulations Section of this Calendar. An applicant should have a high academic standing in previous university work, a Master's degree in a related discipline, as determined by the NRI Selection Committee, and an area of research interest that may be supported by an NRI faculty member. Students must be accepted by an advisor prior to submitting an application to enter the program. A 3.5GPA (or equivalent) in their most recent 60 credit hours of course work and evidence of scholarly ability are required.

### Application Deadlines:

Session	Start Date	Canadian/U.S.	International
Regular	(September)	June 1	February 1
Winter	(January)	October 1	July 1
Summer	(May)	February 1	November 1

### Program Requirements

All Ph.D. students will be required to complete a minimum of 12 and a maximum of 21 credit hours of course work at the 700/7000-level or above, beyond the Master's degree (or its equivalent). A minimum of 6 credit hours of courses must be completed within the Natural Resources Institute and must include NRI 7310 Ph.D. Thesis Research Seminar (3).

Individual programs of study will vary from student to student depending on each student's research interest and the recommendations of each student's advisor and Ph.D. advisory committee. Students will be encouraged to use the pool of Natural Resources Institute required and elective courses as well as appropriate graduate courses available outside of the Natural Resources Institute in order to select the best set of courses to complement their programs.

Student academic progress will be reported annually to the Faculty of Graduate Studies. A minimum Grade Point Average of 3.0, with no grade below C+, must be maintained in order to continue in the program.

Second language reading requirement: required only in special circumstances determined at the time of admission.

Expected time to graduate: three years

## Natural Resources Management

**NRI 7070** Readings in Natural Resources Management  
1 Cr.Hrs.3

Student planned research in an area of interest. Course

syllabus designed by student and approved by NRI faculty. Additional information on the program may be found on the NRI website:

[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7080** Readings in Natural Resources Management  
2 Cr.Hrs.3

Student planned research in an area of interest. Course syllabus designed by student and approved by NRI faculty. Additional information on the program may be found in the NRI Information Bulletin, available through the general office of the institute.

**NRI 7110** Field Seminar Cr.Hrs.3

Exploration of selected issues in resource and environmental studies in field settings, arranged for groups of students. This course is subject to a field trip fee. Additional information on the program may be found in the NRI Information Bulletin, available through the general office of the institute.

**NRI 7120** Mineral Resources Management and Policy Cr.Hrs.3

This course provides an interface between managers and mineral resources, focusing on a selection of practical topics related to minerals and mining. Role of mining activities in the development process; global, national, and provincial distribution of resources; policy issues relating to environmental, economic, and political consequences of non-renewable resource exploitation. Additional information on the program may be found on the NRI website:

[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7130** Energy Resources Management and Policy Cr.Hrs.3

This course covers global energy issues, objectives, strategies, and policies, and the environmental impacts of alternative energy sources; Canadian energy issues, objectives, strategies, and policies. The course stresses the need for a sound understanding of energy issues of fundamental importance, ability to assess alternatives, appreciation of policy strategies and instruments, and the ability to formulate an energy policy for a region. Additional information on the program may be found in the NRI Information Bulletin, available through the general office of the institute.

**NRI 7160** Projects in Natural Resources Management  
1 Cr.Hrs.3

Team research project in an area of interest. Application of problem-solving skills to current issues in natural resources management. Additional information on the program may be found on the NRI website:

[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7170** Projects in Natural Resources Management  
2 Cr.Hrs.3

Team research project in an area of interest. Application of problem-solving skills to current issues in natural resources management. Additional information on the program may be found in the NRI Information Bulletin, available through the general office of the institute.

**NRI 7180** Sustainable Development and Natural Resources Cr.Hrs.3

An examination of the context, concepts, principles, and applications of sustainable development and natural



resources at the international, national, and regional levels. Sustainable development is considered from three perspectives - environment, economy, and peoples' well-being. Particular attention is focused upon the implications of sustainable development for natural resources and environmental management. Permission of the instructor required. Students are advised to consult with Institute faculty prior to admission. Additional information on the program may be found on the NRI website:  
[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7182 Sustainability, Economics, and Natural Resources Cr.Hrs.3**

Economic aspects of sustainability are a critical component of sustainable development. The relationship between environment, economy, and the human dimensions of natural resources comprise the primary focus of the course. Specific topics include environmental/ecological economics, externalities, project assessment, benefit cost analysis, the economics of renewable and non-renewable resource management and economic aspects of globalization.

**NRI 7190 Natural Resources Administration and Law Cr.Hrs.3**

The objective of this course is to explore the legal frameworks and processes in Canada related to natural resource management. After a general review of the Canadian legal system with a particular focus on administrative law, national and international regulatory frameworks related to the ownership and disposition of specific natural resources are explored. Through class discussion, case studies and presentation, the law governing the use and development of natural resources is examined and critiqued. This course is cross-listed with LAW 3980 "Natural Resources Law."

**NRI 7200 The Role of Information Management in Sustainable Resource Use Cr.Hrs.3**

This course reviews some of the key concepts of spatial analysis including geographic information systems, remote sensing, image processing, and cartography. The second part of the course is based on the application of these concepts to a resource management issue using a case study approach. Students will gain familiarity with the following software: Idrisi for GIS; Adobe Photoshop for image processing; and Adobe Illustrator for cartography. Classes will have three components, discussion/presentation; lecture; and lab. Additional information on the program may be found on the NRI website: [www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7222 Human Dimensions of Natural Resources and Environmental Management Cr.Hrs.3**

The human dimensions of Natural Resources and Environmental Management will be considered through the following thematic units: definitions, history, and paradigms of management; intersection of science with politics, actors, groups and participatory processes; Traditional Ecological Knowledge (TEK), communications and environmental perception; institutions, common theory and adaptive co-management. Additional information on the program may be found on the NRI website:  
[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7232 Ecological Dimensions of Resource and Environmental Management Cr.Hrs.3**  
Current concepts and theories in landscape ecology, plant

and animal ecology, life-history strategies, food webs, and population and community ecology are discussed as they relate to management. Common themes throughout the course include the importance of scale, the influence of science on management, adaptive management, and critical thinking. Additional information on the program may be found on the NRI website:  
[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7242 Resource and Environmental Management Policy Cr.Hrs.3**

The complexity of natural resources and environmental policy formulation, implementation, and analysis is the primary focus. Specific topics include: modern state, government and policy development processes; policy community and stakeholders, and role of pressure and interest groups; policy analysis, research and evaluation are examined from a variety of perspectives. Theory and practice are linked in addressing course objectives.

**NRI 7252 Environmental Management Practice Cr.Hrs.3**

Environmental Management systems (e.g. 14001 and Natural step), best management practices and project management. Tools: Awareness (Environmental Policy, Environmental Impacts, Risk Assessment, Life Cycle Assessment), Action (Objectives, Targets, Risk Reduction, Indicators, Monitoring, Activities), Advance (Sustainability Report, Triple Bottom Line, Environmental Audit).

**NRI 7262 Master's Thesis Research Seminar Cr.Hrs.3**

This course will provide a practical introduction to thesis research. The core objective is to assist students in designing their research, including such tasks as considering an appropriate research paradigm, establishing researchable problems, setting goals and objectives, choosing appropriate methods, analyzing data, preparing research proposals, project administration, among other topics. Special attention will be paid to conducting interdisciplinary research in the field of natural resources management. Additional information on the program may be found on the NRI website: [www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7280 Regional Development in Northern Manitoba Cr.Hrs.3**

A comprehensive examination of natural resources, socio-economic conditions, and institutional structures forms the basis for an evaluation of long-term sustainability and developmental strategies for Manitoba's North. Permission of the instructor required. Students are advised to consult with Institute faculty prior to admission. Additional information on the program may be found on the NRI website:  
[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7290 Environmental Impact Assessment Cr.Hrs.3**

Course is a fundamental tool of decision making regarding natural resources and the environment and will provide students with an understanding of how environmental assessment is designed, administered and operates in the field. Additional information on the program may be found in the NRI Information Bulletin, available through the general office of the institute.

**NRI 7302 Conservation Biology and Biodiversity Management Cr.Hrs.3**

The course explores management and conservation of biodiversity at the genetic, species, and ecosystem levels of biological organization, and from local to global scales.



Emphasis is placed on understanding human impacts on biodiversity, critically evaluating the importance of biodiversity conservation, and political, economic, ecological, and philosophical implications and drivers of conservation.

**NRI 7310** Ph.D. Thesis Research Seminar Cr.Hrs.3  
Designing research and methodology specific to a project; reviewing the philosophy of interdisciplinary approaches to Natural Resources and environmental management and trends in the field; analyzing appropriateness of a project with trends and directions in interdisciplinary research; conducting and administering research; communicating and disseminating results of research. Additional information on the program may be found on the NRI website:  
[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7320** Environmental Risk and Hazards Cr.Hrs.3  
Environmental risk and hazards are viewed in terms of complex processes of natural systems and social formation. Analysis of processes and events is assisted by theoretical formulation, development of models and examination of site- or type-specific empirical cases. Additional information on the program may be found on the NRI website:  
[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7330** Water Resources: Analysis, Planning and Management Cr.Hrs.3  
Considering fresh water as a resource, this course initially examines theoretical models and management approaches and practices; water supply requirement, measurements, and management; demand management; and environmental sustainability. The second part encompasses selected aspects of watershed hydrology and management; water and ecosystem health; and river basin management strategies and policies. The final part evaluates institutional arrangements and jurisdictional responsibilities; transboundary issues, opportunities and implications

**NRI 7340** Environmental Justice and Ecosystem Health Cr.Hrs.3  
Explores Ecosystem health and environmental justice issues to realize both the possibilities and barriers to sustainability. Risk, resource distribution and power/decision-making are analyzed across race, gender and class differences. Diverse views, theories and methods on community health consider well-being, quality of life, vulnerability and ecological integrity. Additional information on the program may be found on the NRI website:  
[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7350** Study Design and Quantitative Methods for Resource and Environmental Management Cr.Hrs.3  
This course addresses the quantitative analysis of environmental and natural resources data, emphasizing strong study design to prevent analytical difficulties. Focus is on preparing graduate students in environmental and resources management for dealing with the typical characteristics of environmental data, and for analyses specific to resources data. Additional information on the program may be found on the NRI website:  
[www.umanitoba.ca/institutes/natural\\_resources/](http://www.umanitoba.ca/institutes/natural_resources/)

**NRI 7360** Qualitative Field Methods for Community-based Resource and Environmental Management Cr.Hrs.3  
The purpose of this course is to provide students with the knowledge and skills necessary to undertake qualitative research relevant to CBRM. The course will be offered in a

studio format with an emphasis on student participation in a research team and the practical application of data collection procedures in field setting.

**NRI 7370** Sustainable Livelihoods, Food Resources and Community Food Security Cr.Hrs.3  
About one third of a household's total environmental impact is related to food considering all the effects of livestock, agriculture and the food industry on water, soil and air, the overuse of fish resources, transport and packaging waste. This course analyzes sustainable livelihoods and food security/sovereignty in the food system (production, processing, marketing, etc.).

## Nursing

**Head:** (and Graduate Chair) Judith Scanlan

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**Academic Staff:** Please refer to our website for Academic staff information:<http://umanitoba.ca/nursing>

The Faculty of Nursing currently offers programs leading to the Master of Nursing (MN) degree and a Ph.D. in Cancer Control offered by the Faculty of Nursing and the Department of Community Health Sciences, Faculty of Medicine. The MN program streams are Education, Administration, Clinical, and Nurse Practitioner. The MN program provides students with expertise which enables them to respond in an ever-changing, dynamic, and fluid practice setting, as well as prepares students for possible doctoral study.

Graduates of the program over the past 10 years work in many areas: for example, middle and senior managers, clinical nurse specialists, nurse practitioners, government health policy bureaucrats, nursing educators, and directors of research in institutions. Over 20 percent of graduates pursued doctoral education following their master's program.

### Fields of Research

The Faculty of Nursing has areas of established research excellence and emerging research specialties. Nursing is an 'applied' profession and the nursing research conducted at the University of Manitoba emphasizes the development of nursing knowledge as a basis for evidence-based practice.

The research area of cancer care of individuals and families has gained international recognition with the establishment of the Research Chair in the 'Development of Evidence-Based Nursing Practice in Cancer Care, Palliative Care, and Cancer Prevention'. The awarding of this Research Chair to the Faculty of Nursing facilitated the creation of the joint Ph.D. in Cancer Control with the Faculty of Medicine and acted as the stimulus for the growth of research and scholarship by faculty members and students.



The Canadian Institutes of Health Research (CIHR) Chair in Gender and Health is a program of research that is specifically aimed at examination of inequities and disparities in women's prenatal health; access to prenatal care, and quality of care; exploration of how these disparities intersect with other health determinants such as income, ethnicity, migration, and geography; and study of the association of disparities in women's prenatal health and inequities in access to prenatal care and quality of care with adverse pregnancy outcomes. This Chair award includes funding to support and train full-time graduate students. For further information:

[http://umanitoba.ca/faculties/nursing/research/heaman\\_chair.html](http://umanitoba.ca/faculties/nursing/research/heaman_chair.html)

The Manitoba Research Chair from the Manitoba Health Research Council (MHRC) was awarded from 07/2010 to 06/2015 for the program of research entitled, Advancing our Understanding of Children's and Youth's Health and Illness Experiences. For further information:

[http://umanitoba.ca/faculties/nursing/research/woodgate\\_chair.html](http://umanitoba.ca/faculties/nursing/research/woodgate_chair.html)

The research foci represent the research programs nationally funded, as well as new and emerging research initiatives of faculty members. These foci occur within the context of population and public health to improve client care and health outcomes through knowledge translation.

- Interventions: includes innovations in the care of individuals and families with cancer, disabilities and acute and chronic illnesses; promotion of health with vulnerable populations in the community.
- Professional Foundations: includes theoretical and applied research on nursing and interprofessional education and practice.
- Health Services/Policy: includes research on the delivery, effectiveness, and safety of health services at the individual, community, and population levels; health policy; health administration; and organizational health behaviour.

The Faculty of Nursing has formal linkages with the University of Manchester. Collaborate research is conducted with the Mayo Clinic in Rochester, Minnesota. In addition, other consultation and research occurs at many health facilities in the province. These relationships provide graduate students with many possibilities and opportunities to pursue their areas of interest and expand their understanding of health and health care.

#### Research Facilities

The Manitoba Centre for Nursing and Health Research (MCNHR) is located within the Faculty of Nursing. The MCNHR supports and advances the research and scholarly activities of its members who include faculty and affiliated nursing and health researchers within the community. Available supports to graduate students include methodological and statistical consultation, qualitative and quantitative data analysis programs, and information on research grant initiatives. Opportunities are available for

graduate students to work with MCNHR members as research assistants.

#### Master of Nursing , Admission

In addition to the minimum admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, applicants must possess:

A baccalaureate degree in nursing, mental health nursing or psychiatric nursing or its equivalent from an approved or accredited university. In exceptional circumstances, applicants with a degree in another discipline may be considered on a case by case basis. RPN applicants are not eligible for the Nurse Practitioner stream;

Completion of a Research Methods course and an Introductory Statistics course with a minimum grade of C+ in each course. The content of specific courses may be reviewed to determine whether these criteria are met; and

Proof of active practicing nurse registration in Canada. Applicants from other countries may apply provided they have active practicing nurse status in their home country. After admission, the following is required:

- Canadian Students – Students must maintain Active Practicing Status with the College of Registered Nurses of Manitoba while enrolled in the MN Program.
- Foreign Students – Students in the Graduate Program from outside Canada must provide proof of active practicing nurse status in their home country. Students who do not interact with clients/patients in their clinical practice (i.e., administration and education foci) will not be required to obtain registration in Manitoba. Students who interact with clients/patients (clinical practice and nurse practitioner) will be required to obtain active practicing membership with the College of Registered Nurses of Manitoba (approved by the Graduate Studies Committee, November 20, 2008).

The Faculty of Nursing has additional application requirements and procedures. Check the Faculty of Nursing website for details and the link to the application form on the Faculty of Graduate Studies website:

<http://umanitoba.ca/faculties/nursing/programs/graduate/admission.html>. Completed applications must be received in the Faculty of Graduate Studies by April 1<sup>st</sup> for the year in which admission is sought.

Students admitted to the Master of Nursing program must be fully immunized as prescribed by the Faculty of Nursing Immunization Policy and submit a completed Immunization Record.

#### Application Deadlines



Students in the Faculty of Nursing normally begin their program on September 1<sup>st</sup>. For admission for this start date, Canadian and International students must submit their applications with complete supporting documentation to the Faculty of Graduate Studies by April 1<sup>st</sup>.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The Master's Program in Nursing includes 21 credit hours for students completing a thesis, and 27 credit hours for students completing comprehensive exams. The Nurse Practitioner stream consists of 36 credit hours plus the Clinical Consolidation course.

Second language reading requirement: none

Maximum time to graduate: six years

### Ph.D. in Cancer Control,

The Faculty of Nursing offers a [Ph.D. in Cancer Control](#). Information on this program may be found in another section of this calendar.

### Ph.D. in Applied Health Sciences,

The Faculty of Nursing, in collaboration with the Faculty of Physical Education and Recreation Studies, Faculty of Human Ecology, and School of Medical Rehabilitation, now offers a multi-faculty [Ph.D. in Applied Health Sciences](#). Information on this program may be found in another section of this calendar.

## Nursing

**NURS 7030** Foundations, Issues and Trends in Nursing Cr.Hrs.3

(Formerly 049.703) Explores how social forces have influenced the evolution of nursing, its place in society, and the health care system today. Examines issues and trends affecting present and future development of nursing.

**NURS 7040** Curriculum Development in Nursing Cr.Hrs.3

(Formerly 049.704) The course is designed to explore the developmental phases of curriculum design in a variety of educational settings and types of programs. Students will have the opportunity to engage in the planning and the structuring of educational programs. Course in abeyance.

**NURS 7050** Restorative Nursing Cr.Hrs.6

(Formerly 049.705) Advanced study of the scientific foundations of human functioning as it applies to individuals and families in the context of altered health status. Nursing theories and therapeutic interventions will be applied to the restoration of the health status of individuals and families. Practice is an integral part of the course. Offered on a rotating basis.

**NURS 7080** Special Topics in Nursing Research II Cr.Hrs.3 (Formerly 049.708) Seminar discussion of topics related to current issues and problems in the development, implementation, and evaluation of knowledge utilization programs in nursing practice. Required of all practicum students. Offered when student demand warrants and on a rotating basis.

**NURS 7082** Evidence Informed Practice Cr.Hrs.3

This course will provide a foundation for students to evaluate the theory of evidence informed practice and its relationship to health care delivery. Students will be exposed to the principles of evidenced informed practice, basic epidemiological statistics, systematic reviews, critical appraisal techniques, application of implementation science, and health care intervention evaluation in order to acquire the analytical and questioning skills necessary to review their own work and other literature relevant to health care practices. Asking the right clinical question, searching the literature, critically appraising primary studies, making recommendations(s) for changing clinical practice, and evaluation the effects of a practice innovation or newly developed program are essential components of evidenced informed practice.

**NURS 7084** Role development in Advanced Nursing Practice Cr.Hrs.3

The purpose of this course is to understand the role of advanced nursing practice. The context, complexity, and scope of the roles within professional nursing practice will be explored. Particular emphasis will be placed on the knowledge base and skill set required to be an effective leader in a variety of advanced practice nursing roles. In this course, nursing graduate students for all streams will come together to discuss and debate issues related to advanced nursing practice on a local, regional, national and international level.

**NURS 7086** Integrative Focus Cr.Hrs.3

The purpose of this course is to allow the student to focus in-depth in a substantive area of nursing practice: clinical practice, education or administration. Students will engage in practice in the area of focus, and be guided by the faculty adviser with respect to the goals and direction of the practicum and associated readings. Students will participate in seminars facilitate by the faculty at designated times throughout the practicum.

**NURS 7090** Science and Theory in Nursing Cr.Hrs.3

The course includes an exploration of nursing's theoretical evolution. Issues related to the development and application of theory in a practice discipline will be discussed with a focus on the role of research. Particular emphasis will be placed upon analysis and evaluation of nursing's conceptual and theoretical systems.

**NURS 7100** Administration in Nursing Cr.Hrs.6

(Formerly 049.710) Exploration and analysis of the roles and responsibilities of the nursing administrator in today's health care system. Examination of the organizational structure and culture of nursing services in relation to conflict resolution, interdisciplinary relationships and union negotiation. Includes preceptorship experience. Offered on a rotating basis and currently under review.

**NURS 7110** Readings in Selected Topics Cr.Hrs.3

(Formerly 049.711) An intensive readings course for



graduate students in nursing. Topics may be selected within the general field of nursing to suit the special needs and research interests of students, for example, transcultural nursing, women's health, or palliative care. Students must have a faculty member agree to advise them before registering.

**NURS 7140** The Older Adult: Advanced Nursing Assessment Cr.Hrs.3

(Formerly 049.714) Advanced study and practice integrating theory, concepts, research and skills related to nursing assessment of the strengths and vulnerabilities of older adults and their families. Emphasis is on health promotion for the elderly. Clinical practice in the community and/or the institution is a component of the course. Offered on a rotating basis.

**NURS 7160** Cancer Nursing Research Cr.Hrs.3

(Formerly 049.716) Focuses on recent advances in cancer nursing research with an emphasis on research methodologies, ethical concerns, and design issues pertinent to research with cancer populations. Approaches to utilization of research findings in clinical practice will be addressed. Offered on a rotating basis.

**NURS 7170** Community Health Nursing: Assessment of Aggregate Needs Cr.Hrs.3

(Formerly 049.717) Furthers theoretical and practical knowledge of key components of community health nursing within the primary health care model. Focus is on community health nursing systems and their relationship to the total health care system. Factors influencing past, current, and future community health nursing practice are examined. Emphasis is on assessing aggregate needs and developing advanced skills in working with a target group in the community. Practice in the community is an integral part of the course. Offered on a rotating basis.

**NURS 7180** Community Health Nursing: Community Level Interventions Cr.Hrs.3

(Formerly 049.718) Furthers theoretical and practical knowledge in community wide interventions that promote health. Focus is on the community health nurse's role in program development and evaluation for targeted groups in the community, and the role of influencing health policy through lobby efforts. Practice in the community is an integral part of the course. Prerequisite: NURS 7170 (or 049.717) or permission of instructor. Offered on a rotating basis.

**NURS 7200** Human Responses to Illness Cr.Hrs.6

(Formerly 049.720) Consists of a series of seminars, case studies and clinical practica on human responses common to ill individuals across the lifespan. The emphasis of the course is on synthesis and application of relevant principles of the Human Response to Illness Model, on the development of proficiency in advanced assessment and decision-making, and on initiating, planning and evaluation of nursing interventions. Clinical practice is a course component. Offered on a rotating basis.

**NURS 7210** Qualitative Research Methods in Nursing Cr.Hrs.3

The purpose of this course is to advance knowledge of qualitative methodology and understanding of the ways in which qualitative methodology can be used to understand phenomena of interest in nursing and health care. This

course is designed to provide opportunities for developing specific qualitative research skills, while gaining familiarity with theories, issues, and challenges in qualitative research. Students are exposed to the philosophical assumptions of the qualitative paradigm, ethical issues specific to qualitative research, qualitative sampling strategies, qualitative data collection techniques, and processes associated with the analysis, interpretation, and knowledge translation and utilization of qualitative data.

**NURS 7220** Quantitative Research Methods in Nursing Cr.Hrs.3

The purpose of this course is to advance understanding of the ways in which quantitative approaches can be applied to solve nursing problems. The quantitative research process will be described including literature review, conceptual frameworks in nursing sampling, data collection strategies, analysis of research data, and communication of results. Included are exploration of the status and development on nursing knowledge through quantitative research methods.

**NURS 7250** Foundations of Advanced Practice Nursing Cr.Hrs.3

(Formerly 049.725) A study of the theoretical underpinnings surrounding the development of a variety of advanced practice nursing roles. The focus will be on the issues shaping role development in Manitoba and Canada including economic, political and sociologic factors determining health care policy and delivery will be examined.

**NURS 7260** Health Care in Advanced Practice Nursing 1 Cr.Hrs.6

An examination of the assessment and intervention strategies for individuals from birth to adolescence, including sexuality and reproductive health. Designed to provide the necessary knowledge and experience to assist individuals and their families with the most common health problems. Concepts of health promotion and health maintenance are integrated throughout the course. Integrated clinical practicum (12 hrs/week). Prerequisites: NURS 7250 (or 049.725), NURS 7370, NURS 7380 and NURS 7390.

**NURS 7270** Health Care in Advanced Practice Nursing 2 Cr.Hrs.6

(Formerly 049.727) A study of assessment and intervention strategies for individuals from young adult through older adult. The course is designed to provide the necessary knowledge and experience to assist individuals and their families with the most common health problems. Concepts of health promotion and health maintenance are integrated throughout the course. Integrated clinical practicum (12 hrs/week). Prerequisites: PHAC 2100 (or 089.210), PHGY 7240 (or 090.724), 036.725, NURS 7230 (or 049.723), NURS 7250 (or 049.725).

**NURS 7280** Applied Physiology and Pathophysiology for Nurses Cr.Hrs.6

(Formerly 049.728) This is a clinically-applicable systems approach to normal and altered physiological regulation, and is of specific application to advanced nursing practice. Lectures in physiology and pathophysiology as well as student-led case studies will be used to provide synthesis and application of concepts to common health care problems seen in clinical practice.

**NURS 7290** Woman, Child and Family Health: Nursing Perspectives Cr.Hrs.6



(Formerly 049.729) Detailed study of the theory, concepts, current research and nursing care related to the health needs of women, children and their families. Students will focus their theoretical learning and clinical practice within selected areas of woman, child or family health. Clinical management of selected clients is an integral part of the course. Offered in 2003 and alternate years thereafter.

**NURS 7300** Advanced Health Assessment and Diagnostic Reasoning Cr.Hrs.6

Designed to develop health assessment and critical thinking skills appropriate for clinical practice at an advanced level. The collection and in-depth analysis of subjective and objective health information and the use of diagnostic reasoning are emphasized. All students engage in practice with fellow students, clinical teaching associates and consenting patients. Required for students in the APN major.

**NURS 7310** Health Care Policy: Implications for Nursing Practice Cr.Hrs.3

(Formerly 049.731) Examines the inter-relationships of knowledge development, research utilization, policy formation, health services decision-making, and nursing systems. The selected topics are based on current nursing practice issues in community and institutional settings and their impact in individuals, families and aggregates. A major focus is the analysis of the process of knowledge development and application to health care and nursing systems. Not to be held with the former 049.719 and or NURS 7240 (or 049.724).

**NURS 7320** Philosophy of Nursing Science Cr.Hrs.3

(Formerly 049.732) Advanced seminar to explore philosophies of science which have influenced the development of nursing knowledge. Nursing epistemological traditions are analysed and criticized as they relate to nursing theory development and research. The relationship between nursing science and practice is emphasized.

**NURS 7330** Clinical Consolidation Cr.Hrs.0

Provides an opportunity to consolidate clinical skills, apply theoretical knowledge and research, and synthesize theory and practice in the final year of the Nurse Practitioner stream (10 weeks of 400 clinical hours). Preparation of a final paper that illustrates scholarly endeavour suitable for publication is required.

**NURS 7340** Evidence Informed Practice Cr.Hrs.3

(Formerly NURS 7080) This course will provide a foundation for students to evaluate the theory of evidence informed practice and its relationship to health care delivery. Students will be exposed to the principles of evidenced informed practice, basic epidemiological statistics, systematic reviews; critical appraisal techniques, application of implementation science, and health care intervention evaluation in order to acquire the analytical and questioning skills necessary to review their own work and other literature relevant to health care practices.

**NURS 7350** Role Development in Advanced Nursing Practice Cr.Hrs.3

The purpose of this course is to understand the role of advanced nursing practice. The context, complexity, and scope of the roles within professional nursing practice will be explored. Particular emphasis will be placed on the knowledge base and skill set required to be an effective leader in a variety of advanced practice nursing roles. In this

course, nursing graduate students from all streams will come together to discuss and debate issues related to advanced nursing practice on a local, regional, national, and international level.

**NURS 7360** Integrative Focus Cr.Hrs.6

The purpose of this course is to allow the student to focus in-depth in a substantive area of nursing practice: clinical practice, education or administration. Students will engage in practice in the area of focus, and be guided by the faculty adviser with respect to the goals and direction of the practicum and associated readings. Students will participate in seminars facilitated by the faculty at designated times throughout the practicum. Prerequisite: NURS 7090, NURS 7210, NURS 7220, and NURS 7340.

**NURS 7370** Pathophysiologic Concepts & Therapeutics I Cr.Hrs.3

Introducing principles of cell signaling, physiological feedback systems, adaptive and non-adaptive cellular responses, receptor-ligand interactions, drug kinetics, dynamics and therapeutics. Pathophysiology and treatment of disorders of immunity and inflammation, including hypersensitivity reactions, will also be covered in this course.

**NURS 7380** Pathophysiologic Concepts & Therapeutics II Cr.Hrs.3

This course entails a systems-based analysis of disease states commonly seen in primary care, including cardiovascular, hematological, respiratory, neurologic and renal disorders and their treatment. Problem- and case-based scenarios will be used to encourage critical thinking and integration of pathophysiologic and management principles.

**NURS 7390** Pathophysiologic Concepts & Therapeutics III Cr.Hrs.3

This covers pathophysiology and management of disorders of the musculoskeletal, gastrointestinal, dermatologic, reproductive and urogenital systems. One module will focus on disorders of the head, eyes, ears, nose and throat. A case study approach to instruction will be used almost exclusively in this course, which culminates in a mock 'grand rounds' presentation.

## Occupational Therapy

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**Academic Staff:** Please refer to our website for Academic staff information: [http://umanitoba.ca/medrehab/ot\\_staff.html](http://umanitoba.ca/medrehab/ot_staff.html)

The Master of Occupational Therapy (M.O.T.) is a professional practice degree that can be obtained through participation in either a Regular program or an Accelerated program option. The Regular program is for individuals who do not have a previous degree in occupational therapy. The



Accelerated program is for occupational therapists who have a B.M.R.(O.T.) degree or equivalent.

The Occupational Therapy program maintains accreditation through the Canadian Association of Occupational Therapists and a 7-year accreditation was received in 2012.

### Admission

The following is a summary of the admission requirements. Equivalent academic courses completed at the University of Manitoba or recognized universities elsewhere will be considered. All admission requirements, as well as application deadline dates and forms, are included in applicant information packages that are available from the School of Medical Rehabilitation website:  
<http://umanitoba.ca/medrehab/ot>

### Regular Program

Completion of a previous undergraduate degree, minimum B average in last 60 credit hours of study, completion of all program prerequisite courses or approved alternates with no grade in prerequisites below a B. Prerequisite courses include all of the courses listed below or equivalents\* approved by the M.O.T. Admissions Committee:

Basic Statistical Analysis

Anatomy of the Human Body

Physiology of the Human Body

Minimum 3 credit hours in Psychology

Minimum 3 credit hours in Social Sciences

\* A list of prerequisite courses and equivalents is available at [www.umanitoba.ca/medrehab/ot/ot\\_prerequisite.html](http://www.umanitoba.ca/medrehab/ot/ot_prerequisite.html)

### Accelerated Program

Completion of a B.M.R.(O.T.) degree or equivalent, minimum B average in the last 60 credit hours of the degree, completion of an additional 42 credit hours of non-O.T. degree credits, and evidence of having passed the Canadian Association of Occupational Therapists (CAOT) certification examination and/or eligibility for registration in Manitoba by the College of Occupational Therapists of Manitoba (COTM).

### Application Deadlines

Regular Program: The final date for receipt of applications for admission is **February 1 for Canadian applicants**; January 15 for non-Canadian applicants.

Accelerated Program: Students may begin their program on either September 1 or January 1. For admission for each of

these start dates, Canadian students should send their applications with complete supporting documentation to arrive no less than three (3) months before the intended start date. Non-Canadian students should send their applications with complete supporting documentation to arrive no less than seven (7) months before the intended start date.

### Program Requirements

Program requirements are those of the Faculty of Graduate Studies, found in the Graduate Studies Regulations section of this Calendar. M.O.T. program Supplemental Regulations are available on the School of Medical Rehabilitation website:  
[www.umanitoba.ca/medrehab/media/supplementary\\_regulations.pdf](http://www.umanitoba.ca/medrehab/media/supplementary_regulations.pdf)

Second language reading requirement: None

Expected time to graduate: Regular program - 2 years;  
Accelerated program - 1 year.

Students in the M.O.T. **Regular program** must complete 107 credit hours of course work. All academic and fieldwork courses and a professional portfolio must be successfully completed in order to graduate.

Students in the M.O.T. **Accelerated program** will be required to take 12 credit hours of academic course work from the M.O.T. program or equivalent. Six of these credit hours are to be OT 7750 Independent Study or equivalent. A professional portfolio must also be successfully completed.

Fieldwork education is an integral part of the M.O.T. Regular program. Field placement experiences are integrated throughout the program and include 1 four-week, 2 eight-week and 1 six-week experience. Field placements normally occur in Manitoba and Saskatchewan. All students should be prepared to travel out of Winnipeg for a minimum of one placement during the course of the program.

Occupational Therapy students are required to provide a health history and immunization record. A student will not be permitted to attend fieldwork placements until all health, immunization, CPR, mask fit and records check requirements are met.

**Health Requirements:** Standard Health Record Form Packages are sent to new occupational therapy students upon acceptance into the program. New students in Occupational Therapy are required to return forms to their department by dates published yearly in the Health Record Form Packages. Second year students are required annually to review and update immunizations as necessary.

**Cardiopulmonary Resuscitation Certification:** All students of the Department of Occupational Therapy are required to obtain certification in cardiopulmonary resuscitation. Certification must be at the Basic Rescuer Level. New students in the program must provide proof of certification within the first 2 weeks of classes of the academic year in which they commence classes. This certification must have



an issue date on or after July 1 of the year the student commences classes in the program. Second year students must provide proof of re-certification by October 1 of their second year in the program. This certification must have an issue date during or after the last week of August of the current year. Certification must remain current for all fieldwork experiences.

**Mask Fit Certification:** Clinical/fieldwork education sites require students to maintain mask fit certification. Information on acquiring this certification is provided to new students with the Health Record Form Packages. All students are required to maintain mask fit certification throughout the program.

#### **Criminal Record Check and Child Abuse Registry**

**Check:** Students are advised that clinical/fieldwork education sites require that students complete a Criminal Record Check (including a vulnerable sector screen) and a Child Abuse Registry Check. New students in the Master of Occupational Therapy program must provide results of a Child Abuse Registry Check and a Criminal Record Check within the first 2 weeks of classes of the academic year in which they commence classes. Both checks must have an issue date after July 1 of the year the student commences classes in the program. Second year students must provide updated results by October 1 of their second year in the program. Both checks must have an issue date during or after the last week of August of the current year.

### **Occupational Therapy -6000 Level**

**OT 6100** Human Determinants of Occupational Performance Cr.Hrs.6  
(Formerly 168.610) Students study the anatomical, physiological, biomechanical, and psychosocial factors that underlie the physical, cognitive and affective components of human capacities. Content is presented in the context of understanding the relationship between human capacities and occupational performance, the ability to carry out activities and tasks of self-care, productivity and leisure throughout the lifespan.

**OT 6110** Theoretical and Philosophical Foundations of Occupational Therapy Cr.Hrs.3  
(Formerly 168.611) Students study the theoretical and philosophical foundations of occupational therapy and the relationship between occupation and health and well-being. A case based introduction to the processes and approaches that guide practice with clients of various ages and in a variety of practice settings.

**OT 6120** Health and Disability Cr.Hrs.3  
(Formerly 168.612) Students study definitions of health, factors influencing health, and systems that relate to health in populations. Students are also introduced to classification of diseases and disorders and impairments and the disablement process.

**OT 6130** Occupational Therapy Practice Skills 1 Cr.Hrs.3  
(Formerly 168.613) Through instruction, case illustration and practice laboratory sessions students are introduced to practice skills related to the occupational therapy process.

Occupational therapy skills and approaches used to identify occupational performance issues are introduced and practiced. Basic assessment of physical, cognitive, and affective performance components are taught. Students participate in problem solving and basic interventions around issues of occupational performance.

**OT 6140** Enabling and Professional Development Skills Cr.Hrs.7

(Formerly 168.614) An introduction to the development of personal knowledge, skills and attitudes related to enabling occupation in clients, and to promoting professional behaviours for safe, reliable and ethical practice. Emphasis will be placed on the development of a variety of verbal and written communications skills, and clinical/professional reasoning.

**OT 6190** Fieldwork Preparation Cr.Hrs.1

This course provides foundational knowledge and skills required to participate effectively in the fieldwork component of the Occupational Therapy Program. Course evaluated on a pass/fail basis.

**OT 6200** Basic Fieldwork Cr.Hrs.4

(Formerly 168.620) Students are placed in practice settings for four weeks of field experience under the supervision of a registered Occupational Therapist. Experiences are offered in a wide variety of Field sites in Manitoba, Saskatchewan and northwestern Ontario. Evaluated at an introductory level. Course evaluated on a pass/fail basis. Prerequisite: OT 6190.

**OT 6300** Occupational Analysis and Adaptation Cr.Hrs.4

(Formerly 168.630) An in-depth examination of the relationship between components of human performance and engagement in occupations throughout the lifespan. Students analyze self-care, productivity and leisure occupations to identify physical, cognitive and affective components required for function. Principles and methods of adaptation and grading of occupation, task, activity, equipment and environment will be introduced.

**OT 6310** The Environment and Occupational Performance Cr.Hrs.4

(Formerly 168.631) An examination of physical, social, cultural and institutional aspects of the environment and their relationship to occupational performance throughout the life span. Students will begin to identify the environment in terms of enablers and obstacles to function for individuals with variable capacities.

**OT 6320** Health Conditions and Occupational Performance Cr.Hrs.4

(Formerly 168.632) An introduction to diseases, disorders and impairments as barriers to human occupational performance including an introduction to occupational therapy management approaches to enabling function.

**OT 6330** Occupational Therapy Practice Skills 2 Cr.Hrs.4

(Formerly 168.633) This course builds on OT Practice Skills 1. With a focus on practice skills related to the occupational therapy process, students gain further practice in assessment of occupational performance issues and physical, cognitive, and affective performance components. Students are introduced to assessment of environmental factors that influence occupational performance and participate in problem solving and interventions around



occupational performance issues.

**OT 6350** Research Methods for Evidence-Based Practice Cr.Hrs.4  
(Formerly 168.635) This course is a theory and practical course designed to provide a basic understanding of research principles and methods, evidence-based practice, outcome measures, program evaluation and their applications in occupational therapy.

**OT 6400** Intermediate Fieldwork 1 Cr.Hrs.8  
Students are placed in practice settings for eight weeks of field experience under the supervision of a registered occupational therapist. Experiences are offered in a wide variety of field sites in Manitoba, Saskatchewan and northwestern Ontario. Evaluated at an intermediate 1 level (pass/fail grade).

### Occupational Therapy -7000 Level

**OT 7540** Advanced Enabling and Professional Development Skills 1 Cr.Hrs.4  
(Formerly 168.754) Builds on Enabling and Professional Development 1&2. Emphasis is placed on the integration and consolidation of professional practice knowledge, skills and attitudes.

**OT 7560** Occupational Therapy Process Across the Lifespan 1 Cr.Hrs.6  
(Formerly 168.756) Using problem-based learning methods, students study and apply the occupational therapy process as it relates to selected learning scenarios involving children, adolescents, adults and older adults. Students work in small group tutorials exploring and discussing a variety of issues frequently faced by individuals who may benefit from occupational therapy services.

**OT 7570** Advanced Practice in OT 1 Cr.Hrs.6  
(Formerly 168.757) Building on knowledge and skills learning in Practice Skills 1 and 2, students are introduced to advanced concepts, theories and models that guide client-centered occupational therapy evaluation and intervention. Students learn to apply theory to practice and continue developing required skills for the evaluation and intervention of occupational performance issues across the lifespan.

**OT 7600** Intermediate Fieldwork 2 Cr.Hrs.8  
(Formerly 168.760) Students are placed in practice settings for eight weeks of field experience under the supervision of a registered occupational therapist. Experiences are offered in a wide variety of field sites. Evaluated at an intermediate 2 level (pass/fail grade).

**OT 7740** Advanced Enabling and Professional Development Skills 2 Cr.Hrs.4  
(Formerly 168.774) Builds on previous Enabling and Professional Development courses. Emphasis is placed on leadership skills and preparation for entry into the professional community.

**OT 7750** Independent Study Cr.Hrs.6  
(Formerly 168.775) Students complete an in-depth study of evidence for practice in an area of interest. Students will work with an assigned faculty advisor or clinical research consultant to define and evaluate a particular area of interest

in occupational therapy practice.

**OT 7760** Occupational Therapy Process Across the Lifespan 2 Cr.Hrs.6  
(Formerly 168.776) Using problem-based learning methods and self-directed learning, students study and apply the occupational therapy process as it relates to selected learning scenarios involving children, adolescents, adults and older adults. Students work in small group tutorials exploring and discussing a variety of issues frequently faced by individuals, groups and communities who may benefit from occupational therapy services.

**OT 7770** Advanced Practice in OT 2 Cr.Hrs.6  
Building on knowledge, skills and attitudes learned in Advanced Practice in OT 1, students employ and evaluate concepts, theories and models of client-centred occupational therapy. Students develop skills that enable them to select, justify, and interpret appropriate evaluation methods and interventions to address occupational performance issues across the lifespan.

**OT 7800** Advanced Fieldwork Cr.Hrs.6  
(Formerly 168.780) Students are placed in practice settings for a six week period which can occur in a flexible time frame (i.e. students may initiate this placement at different points in time from July 1 to mid August depending upon availability of placements. Students may participate in part-time experiences over a longer period or other types of flexible arrangements as may arise and are determined to be appropriate learning experiences to meet educational standards). Experiences are offered in a wide variety of field sites. Evaluated at an advanced level (pass/fail grade).

### Oral Biology

**Head:** R. Bhullar

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**Website:** [http://umanitoba.ca/dentistry/oral\\_biology](http://umanitoba.ca/dentistry/oral_biology)

**Academic Staff:** Please refer to our website for Academic staff information: [http://umanitoba.ca/dentistry/oral\\_biology](http://umanitoba.ca/dentistry/oral_biology)

The Department of Oral Biology was the first of its kind in North America and reflects the longstanding philosophy that dental education should include a strong science base provided by academic staff with major commitments to undergraduate dentistry and basic dental/medical research. This approach fosters not only the teaching of material relevant to dentistry, but serves to integrate the sciences into the various clinical programs. Associated with this philosophy is the concept that such committed faculty would also foster Faculty research supporting a graduate program in Oral Biology, as well as providing research and teaching expertise for the clinical graduate and postgraduate programs. Today, Oral Biology at Manitoba is recognised nationally and internationally as an outstanding basic science research department.



The Department of Oral Biology offers graduate instruction and research leading to MSc and PhD degrees in a unique environment. Because of the size of the department, individual instruction and direction in research is a cornerstone of the graduate experience. The graduate programme is designed to accommodate students seeking career opportunities in oral biology or in related basic dental and medical science disciplines. At the heart of the Oral Biology program is the requirement in both degrees for the completion of a substantial and original research project in the laboratory of a faculty member. In most cases, the research undertaken will fall within the area of expertise of the faculty member and will employ the most up-to-date techniques available in the field. In addition students are required to complete a number of formally instructed courses in oral biology and/or related disciplines. The diversity of scientific areas within the Department of Oral Biology allows students to be accepted with either an appropriate professional degree or a B.Sc. (Hons.) with satisfactory background in the biological sciences. In addition, the Department of Oral Biology offers a Pre-Master's Program for selected students with general undergraduate degrees.

The Department of Oral Biology, as a leader in oral biology research, has established connections with numerous researchers and institutes all over the world. Ongoing research collaborations include those with universities in the United States, Sweden, and the United Kingdom. The Faculty of Dentistry consistently ranks among the top three dental faculties in Canada for basic science research. Basic science and clinical/basic science research has received high levels of funding from the Medical Research Council of Canada for more than 30 years.

Recipients of higher degrees from the Department of Oral Biology have been extremely successful following graduation. Recent graduates have either secured positions, or are completing further training, at the universities of Toronto, Dalhousie, British Columbia, Florida, Harvard, Laval and with the federal government.

#### Fields of Research

Cell biologists are studying the molecular/genetic mechanisms involved in the development and function of orofacial tissues in the healthy and disease states. Studies are also proceeding on the effects of tobacco smoke components on the structure and function of fetal lung cells and lung surfactant. Researchers in the department are investigating interactions in the brain that regulate neurotransmitter molecules in the progression of such disorders as depression and schizophrenia. Others, with an interest in natural medicine, are examining the effects of plant extracts in countering ear infections and hearing loss. Cell signaling/regulation studies continue on a number of fronts, including the role of the calcium-activated protease, calpain, in cell proliferation; the generation and action of membrane phospholipid-associated second messengers in exocrine secretion; and the central role/mechanisms of GTP-binding regulatory proteins and protein kinases in platelet function. The use of nanobiotechnology in diagnosis and therapy is also being explored. A study on gene expression in enamel formation in normal and abnormal teeth is being carried out.

#### Research Facilities

The faculty has modern laboratories with state-of-the-art equipment for research in microbiology, physiology, biochemistry and molecular biology. Excellent tissue and cell culturing facilities are present as is unique equipment for such specialities as atomic absorption spectroscopy, chemostat bacterial culture and Fourier transform infrared spectroscopy through collaborations with NRC. Excellent clinical facilities also provide opportunities for graduate students to carry out orthodontic and periodontal work. These facilities, when combined with basic science and biomaterials laboratories, allow for the effective integration of research and clinical practice.

#### M.Sc. in Oral Biology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Students should possess an appropriate professional degree or B.Sc. (Hons.) degree with a satisfactory background in biological sciences or satisfactory completion of a pre-master's program in the Department of Oral Biology. The qualifications of all students applying for admission to the M.Sc. programs in Oral Biology will be assessed by the Department of Oral Biology Committee on Graduate Studies and Research and a recommendation made to the head of the department. Students with other degrees or backgrounds may be eligible for admission to a pre-Master's program to the satisfaction of the department. Contact the department for information.

#### Application Deadlines

Applications should be received in the Faculty of Graduate Studies by the dates indicated below:

Start Date	Canadian/U.S.	Non-Canadian	
Regular	(September)	June 1	March 1
Winter	(January)	October 1	July 1
Spring	(May)	February 1	November 1
Summer	(July)	April 1	January 1

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The M.Sc. program requires satisfactory completion of course requirements as specified by each student's supervisory committee and a thesis based on original research. Minimum course requirements are 12 credit hours **which must include** course ORLB 7190 Communication Skills in Dental Research (unless students have previous credit for this or an equivalent course). **Courses taken during the pre-Master's program cannot be transferred as credits towards the Master's program.** M.Sc. students are expected to attend all departmental seminars. Students shall present one seminar on their research to the department each year, updating it each year. In addition, students must pass an oral examination on the



subject of the thesis and matters relating thereto. The examination shall be open to all members of the university community who wish to attend. The form of the oral examination shall be the same as that for the Ph.D. thesis oral examination described in the Faculty of Graduate Studies Regulations governing the Ph.D. program.

Second Language Reading Requirement: none

Expected Time to Graduate: dependent on progress

### Ph.D. in Oral Biology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. A M.Sc. degree is required, although students of exceptional or proven ability holding an appropriate professional degree or a B.Sc. (Hons.) degree may be admitted. The qualification of all students applying for admission to the Ph.D. program will be assessed by the Department of Oral Biology Committee on Graduate Studies and Research and a recommendation made to the head of the department.

A student whose knowledge of the field of Oral Biology is in doubt, after first registration for the degree, may be required to take a qualifying examination within the first 12 months of study at the discretion of the advisory committee. It is the responsibility of the committee to organize this examination.

The qualifying examination, which will consist of a written and an oral component, will be administered as in the candidacy examination. The result will be indicated as "pass" or "fail." A student who fails will be required to withdraw.

### Application Deadlines

Applications should be received in the Faculty of Graduate Studies by the dates indicated below:

Start Date	Canadian/U.S.	Non-Canadian	
Regular	(September)	June 1	March 1
Winter	(January)	October 1	July 1
Spring	(May)	February 1	November 1
Summer	(July)	April 1	January 1

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The Ph.D. program requires satisfactory completion of course requirements as determined by each student's advisory committee and a thesis based on original research. Minimum course requirements shall be 12 credit hours at the 7000 level beyond the Master's degree, **and must include** course ORLB 7190 Communication Skills in Dental Research (unless students have previous credit for this or an

equivalent course). **Courses taken during the pre-Master's and Master's programs cannot be transferred as credits towards the Ph.D. program.** Ph.D. students are expected to attend all departmental seminars. Students shall present at least one seminar on their own research to the department each year.

Second language requirement: none

Expected time to graduation: dependent on progress

### Oral Biology -7000 level

**ORLB 7090** Pharmacology and Therapeutics Cr.Hrs.3 (Formerly 100.709) A combined lecture and seminar course on the pharmacological basis of therapeutics. Special attention will be paid to drugs used commonly in the practice of dentistry, their side effects and their interaction.

**ORLB 7100** Oral Microbial Ecology Cr.Hrs.3 (Formerly 100.710) Study of principles of ecology in relation to the various ecosystems in the oral cavity. In depth examination of the taxonomic relationships of oral bacterial species. Emphasis will be placed on the growth and metabolic activities of oral bacteria which lead to successful colonization of the mouth.

**ORLB 7110** Infectious Diseases and the Oral Cavity Cr.Hrs.3 (Formerly 100.711) The description of the aetiology of microbial infections in the mouth and infections elsewhere in the body which involve oral bacteria. The control of such infections by vaccines, antibiotics and antimicrobial drugs. Treatment of infections in the immuno-suppressed, post operative infections and nosocomial infections. The relationships of host immune system to the oral flora.

**ORLB 7120** Special Problems in Oral Biology Cr.Hrs.3 (Formerly 100.712) Each student will be required to carry out a minor research project in an area of oral biology other than that of their thesis work. The results of this project will be presented in a seminar and submitted as a written report.

**ORLB 7130** Macromolecular Interactions of Connective Tissue in Health and Disease Cr.Hrs.6 (Formerly 100.713) A comprehensive study of the macromolecular constituents of connective tissue, of their synthesis, metabolism, macromolecular interaction in health and disease, and of their regulatory mechanisms.

**ORLB 7140** Cell Membrane and Cell Signaling Cr.Hrs.3 This course will cover the structure and function of cell membrane receptors. The mechanisms and regulation of membrane coupled signal transduction pathways including those stimulated by oral tastants and drugs will also be covered.

**ORLB 7150** MECH ORAL & MAX DIS Cr.Hrs.3 This course deals with the molecular pathology of the oral cavity and maxillofacial complex.

**ORLB 7162** Neurophysiology of Pain Cr.Hrs.3 This course examines the peripheral and central



mechanisms associated with pain. Endogenous pain control systems and the pharmacological treatment of pain will also be covered.

**ORLB 7180** Recent Advances in Oral Biology Cr.Hrs.6 (Formerly 100.718) This course is given by staff in the form of lectures and tutorials. Additional lectures may be given by visiting scientists. Students are expected to familiarize themselves with the relevant literature and are examined for an in-depth appreciation of the topics covered.

**ORLB 7190** Communication Skills in Dental Research Cr.Hrs.3 (Formerly 100.719) A course to develop written, visual and oral communication skills in scientific and clinical disciplines related to dentistry.

## Pathology

**Head:** Dr. John G. Gartner

**Campus Address/General Office:** 401 Brodie Centre, 727 McDermot Avenue

**Telephone:** (204) 789 3538

**Fax:** (204) 789 3931

**Email Address:** [patholog@ms.umanitoba.ca](mailto:patholog@ms.umanitoba.ca)

**Website:**

<http://umanitoba.ca/faculties/medicine/units/pathology/pathologygraduate.html>

**Academic Staff:** Please refer to our website for Academic staff information: <http://umanitoba.ca/medicine/pathology/faculty.html>

The Department of Pathology offers two programs leading to a M.Sc. degree. Honours Science graduates with a strong background in biology can carry out course work plus either a) a research based program and thesis, or b) a practicum leading to a paramedical qualification as a Pathologist's assistant.

### Fields of Research

Primary research interests of the faculty include developmental neuropathology, the immunobiology of graft versus host disease, breast cancer, renal transplantation, and cutaneous autoimmunity.

### Research Facilities

Research laboratories of pathology faculty members are found in multiple locations. The core laboratories of the department are situated in the Brodie Centre, John Buhler Research Centre and the Rehab Medical Building at the Bannatyne Campus, University of Manitoba.

### M.Sc. in Pathology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Department deadlines for Regular Session (September Start Date) are June 15 (May 15 for international students) to the practicum program and June 15 for the research based program.

### Program Requirements

Program requirements are those of the Faculty of Graduate Studies as found in the Graduate Studies Regulations Section of this Calendar. Second language reading requirement: none

### Ph.D. in Pathology,

The Department of Pathology does not offer a Ph.D. Program. Students interested in further research may continue in the same laboratory but register in the Ph.D. program of another department, or in the interdisciplinary Ph.D. program.

## Pathology

**PATH 7010** Investigative Pathology Cr.Hrs.6 (Formerly 088.701) The student will complete a supervised project in the field of anatomic and/or clinical pathology, the results to be submitted in an acceptable report. The student will be examined on his/her knowledge in the field relating to his project. Prerequisite: PATH 7020 (or 088.702) or departmental consent.

**PATH 7020** Introduction to Pathology Cr.Hrs.6 (Formerly 088.702) The course introduces the student to the basic principles of disease processes, using case models to illustrate mechanisms. Assigned reading or seminar presentation will form part of the course.

**PATH 7030** Pathologist Assistant Field Practicum Cr.Hrs.20 The Field Practicum is extensive hands-on training in Anatomic Pathology as it relates to the methods and theory of Surgical and Autopsy Pathology. Emphasis is on examination, specimen preparation, dissection techniques and tissue selection as it relates to accurate diagnosis, prognosis, and patient management. The Field Practicum extends over three terms in Year 1 and two terms in Year 2 with an equivalent of 4 credit hours per term.

## Peace and Conflict Studies

**Head:** Sean Byrne

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**Academic Staff:** Please refer to our website for Academic staff information: [http://umanitoba.ca/mauro\\_centre](http://umanitoba.ca/mauro_centre)



### Peace and Conflict Studies Joint M.A. Program,

The Joint M.A. Program in Peace and Conflict Studies (JMP-PACS) encompasses the analysis and resolution of social conflicts; peace research that examines the structural roots of social conflicts, divisions, and social inequalities; and strategies for building community and promoting social justice. The Program is intended to be rigorous as the significance of research and intervention for conflict resolution, peace-building, and creating a culture of human rights demands a high standard of commitment, scholarship, and professionalism.

The Joint M.A. Program is supervised by the [Joint Discipline Committee \(JDC\)](#) consisting of members of the faculty of the University of Manitoba and the University of Winnipeg. The program is governed by the general procedures and regulations devised by the two universities for Joint Master's Programs.

Courses and thesis direction are offered at both institutions, and students completing the program may elect to receive their degrees from both of the participating universities. Students may choose between a course/practicum option and a thesis option.

#### Chair | The University of Manitoba

Chair, Joint Discipline Committee (until Jun/30/2012)  
**Sean Byrne**, Professor of Peace and Conflict Studies

#### Chair | The University of Winnipeg

Associate Chair, Joint Discipline Committee (until Jun/30/2012)

**Dean Peachey**, [Global College](#)

For More Information on our M.A. program please visit: [Joint M.A Program in Peace and Conflict Studies](#)

### Admission

Admission requirements are those of the Faculty of Graduate Studies found in the [Graduate Studies Master's Regulations section](#) of this calendar. Graduates of a four-year honors or four-year baccalaureate degree, either: (a) earned in peace and conflict studies, or conflict analysis and resolution; or (b) earned in another related discipline, such as education, law, social work, native studies, political studies, human ecology, human rights, women's studies, and sociology, among others. A high academic standing in previous university work with a minimum Grade Point Average (GPA) of 3.0 in the last 60 credit hours are eligible for admission to a course of study leading to the Master's degree. Appropriate research capability, typically demonstrated by authorship of a major research paper, for example, a senior undergraduate term paper, or thesis, or an article in a refereed publication. Applicants will also have a proficiency in the English language at levels required by the Faculty of Graduate Studies.

International students, please refer to the [International Equivalency Criteria](#).

For more information on admission requirements please visit: [Joint M.A Program Admission Requirements](#).

### Admission Deadline

The deadline for receipt of the Joint M.A. program application form and supporting documents for a September admission is **January 15** for all students. Students who wish to apply for a University of Manitoba Graduate Fellowship (UMGF) need to have their applications in before **January 15** (for a September admission).

### Program Requirements

Minimum requirements of the Faculty of Graduate Studies are found in the [Graduate Studies Master's Regulations section](#) of this calendar. The Joint M.A. Program in Peace and Conflict Studies has the following requirements:

**Thesis Option:** requirements are twelve credit hours of core courses\*; three credit hours in research methods; three credit hours in an elective of practicum; a thesis proposal and defence, and a thesis examination. The research methods and electives can be taken from a list of approved courses at the 500 or 700 level.

**Comprehensive Exam Option:** requirements are twelve credit hours of core courses\*; three credit hours in research methods; three credit hours in practicum; twelve credit hours of PACS electives; and a comprehensive examination. The research methods, and PACS electives can be taken from a list of approved courses at the 500 or 700 level.

After the completion of 9 credit hours of coursework within the Program, the student should work with their Advisor and the Department Head to determine their intention to pursue either (a) the comprehensive exam option, or (b) the thesis option.

#### \*Core courses are:

PEAC 7010 Interpersonal Communication, Problem-Solving and Trust-Building  
PEAC 7020 Theories of Conflict and Conflict Resolution  
PEAC 7110 International Human Rights and Human Security  
PEAC 7120 Peace-building and Social Justice

The Peace and Conflict Studies Joint M.A. Program Committee must approve all academic programs. This is normally done on the recommendation of the student's Advisor and/or Advisory Committee following consultation with the student.

For more information on the Joint M.A. program requirements please visit: [Joint M.A. Program Requirements](#).



#### Peace and Conflict Studies Ph.D. Program,

The Ph.D. Program in Peace and Conflict Studies provides an interdisciplinary approach to analyze and resolve social conflicts through innovative peace research that examines the structural roots of social conflicts, divisions, and inequalities, and strategies for building community and promoting social justice. The focus of the program allows students to examine theory building, skills, and techniques of nonviolent practice and conflict resolution.

The objective of the Ph.D. program is to prepare educators, researchers, professionals, and public intellectuals to face some of the most challenging problems and tasks of our time by analyzing and resolving the complex issues facing the global milieu of peace and conflict using a variety of tools, processes, and methods common to conflict analysis and resolution, social justice and peace studies. World societies are increasingly aware that they must work together to face shared problems relating to, for example, economic development, environmental issues, health issues, and catastrophes such as famine. Graduates will have demonstrated the ability to analyze conflict, work collaboratively to resolve conflicts, and forge pathways to peace. These analytic and practical skills are important in numerous professional contexts and are increasingly in demand as international governmental and nongovernmental organizations play an increasing role in world affairs.

For More information on our Ph.D. program please visit our website: [PhD Program in Peace and Conflict Studies](#)

#### Admission

Admission requirements are those of the Faculty of Graduate Studies found in the [Graduate Studies Regulations section](#) of this calendar. Graduates of master's degree in Peace and Conflict Studies (or equivalent from other recognized universities) with a minimum Grade Point Average (GPA) of 3.0 in the last 60 credit hours are eligible for direct admission to a course of study leading to the doctoral degree. Graduates of master's degree in diverse disciplines at the University of Manitoba (or equivalent from other recognized universities) are also eligible for direct admission to the program pending successful completion of prerequisite courses to ground them in the field. Applicants will have a thesis-based master's degree, either earned in peace and conflict studies or a related discipline such as social work, education, or sociology, among others. In the event a master's degree is not thesis-based, research capability may be demonstrated by a major research paper from a recognized institution, or an independently completed research article published in a refereed journal. Applicants will also have a proficiency in the English language at levels required by the Faculty of Graduate Studies.

International students, please refer to the [International Equivalency Criteria](#).

For more information on Ph.D. admission requirements please visit: [PhD Program Admission Requirements](#).

#### Admission Deadline

The deadline for receipt of the PhD Program application form and supporting documents for a September admission is **December 15** for all students. Students who wish to apply for University of Manitoba Graduate Fellowships (UMGF) need to have their applications in before **December 15** (for a September admission).

#### Program Requirements

Minimum requirements of the Faculty of Graduate Studies are found in the [Graduate Studies Ph.D. Regulations section](#) of this calendar. The Ph.D. Degree in Peace and Conflict Studies requirements are 24 credit hours; twelve credits of required course work at the 700 level; six credit hours in a cognate area and 6 credits in research methodology, plus a candidacy examination, a thesis proposal, and a thesis. The six credit hours of cognate and methodology courses can be taken from a list of approved courses at the 500 or 700 level.

Students whose master's degree is not in Peace and Conflict Studies will normally be required to take some prerequisite courses in the field as occasional students in order to be admitted to the Program.

The Peace and Conflict Studies Graduate Program Committee must approve all academic programs. This is normally done on the recommendation of the student's Advisor and/or Advisory Committee following consultation with the student.

For more information on Ph.D. program requirements please visit: [PhD Program Requirements](#).

#### Peace and Conflict Studies

**PEAC 7010** Interpersonal Communication, Problem-Solving, and Trust-building Cr.Hrs.3

Examines the role of language and communication in conflict and conflict resolution. These theoretical and practice perspectives are fundamental to the field of conflict analysis and resolution/peace studies. The role of power, gender, and culture in communication and conflict are reviewed. Theories and practical skills for successful communication, collaborative problem-solving, and trust-building are explored. This class is relevant for addressing conflicts within diverse settings.

**PEAC 7020** Theories of Conflict and Conflict Resolution Cr.Hrs.3

Provides an overview of the theoretical foundations of the interdisciplinary field of conflict analysis and resolution, examining macro and micro theories regarding the causes of conflicts and approaches to their resolution. Conflicts are complex and take shape on multiple, interlocking planes.



The course focuses on theory and the implications of these theories for practice.

**PEAC 7030** International Conflict Resolution and Peace-building Cr.Hrs.3

Examines international conflict resolution and post-accord peace-building. Theories regarding the causes of international conflict are reviewed. Approaches for just and enduring resolution to international conflicts, building peace, and the promotion of a global civil society are explored.

**PEAC 7040** Violence Intervention and Prevention Cr.Hrs.3

Examines different definitions and types of violence from the interpersonal to the global levels (e.g., family violence, youth and gang violence, violence in the workplace, hate crimes, and war). Theories of human aggression and causes of violence, as well as approaches for violence intervention and prevention are reviewed. Theories of nonviolence are explored.

**PEAC 7050** Intercultural Conflict Resolution and Peace-Building Cr.Hrs.3

Examines the role of socially constructed identities and meaning in intergroup conflicts in a variety of contexts. Culture is broadly conceived to encompass a variety of identities, including differences along racial, ethnic, religious, gender, and class lines. Various models for resolution are reviewed. The nature of and ethics of intervention in cultures other than one's own are explored.

**PEAC 7060** Special Topics in Peace and Conflict Studies 1 Cr.Hrs.3

The topics addressed in this course will vary depending on faculty expertise and student need. Topics could include but will not be restricted to: "Gender and Conflict;" "Storytelling: Identity, Power and Transformation;" "Ethnic Conflict Analysis and Resolution;" "Children and War;" "Peace Education;" "Transformational Conflict Resolution;" "Role of Religion in Conflict and Peace."

**PEAC 7070** Special Topics in Peace and Conflict Studies 2 Cr.Hrs.3

The topics addressed in this course will vary depending on faculty expertise and student need. Topics could include but will not be restricted to: "Gender and Conflict;" "Storytelling: Identity, Power and Transformation;" "Ethnic Conflict Analysis and Resolution;" "Children and War;" "Peace Education;" "Transformational Conflict Resolution;" "Role of Religion in Conflict and Peace."

**PEAC 7110** International Human Rights and Human Security Cr.Hrs.3

This course examines the shift in focus from state security to people. Human security is a bridge between the inter-related fields of development, human rights and conflict resolution. The course explores how these efforts at exploring the human condition can best be understood and applied.

**PEAC 7120** Peacebuilding and Social Justice Cr.Hrs.3

This course examines the role of peacebuilding in short term crisis intervention and longer term conflict transformation processes. Social justice is addressed at the systems level as it impacts the achievement of sustainable reconciliation. Crisis management in conflict settings, the root causes of conflict and its prevention are explored.

**PEAC 7122** Dispute Systems Design Cr.Hrs.3

Examines the role of conflict resolution within organizations and diverse settings (workplace, schools, communities, multiparty conflicts, international conflicts). The course focuses on analyzing how conflict is built into organizational structures and systems, and redesigning the system to produce effective human relations.

**PEAC 7124** Gender, Conflict and Peacemaking Cr.Hrs.3

Examines the role of gender in conflict and peacemaking in areas of armed conflict. Women tend to be impacted and respond to conflict in ways different from men. The course explores the theoretical and practical contributions of women activists, peace researchers and educators have made toward understanding the role of gender

**PEAC 7126** Ethnic Conflict Analysis and Resolution Cr.Hrs.3

Examines theories of ethnic conflict and the intervention methods used by states, international organizations and conflict resolution and peace practitioners to analyze, manage and resolve ethnic conflicts. Case studies are used to explain conflict analysis and resolution and peacebuilding.

**PEAC 7128** Storytelling: Identity, Power and Transformation Cr.Hrs.3

Examines the role of narrative and storytelling in conflict resolution, theory, research and practice. The relationship between language and power and destructive or constructive relationships is explored. The use of storytelling-based projects as a means of peacebuilding and community building are explored.

**PEAC 7230** Gender, Conflict and Peacemaking Cr.Hrs.3

Examines the role of gender in conflict and peacemaking in areas of armed conflict. Women tend to be impacted and respond to conflict in ways different from men. The course explores the theoretical and practical contributions women activists, peace researchers and educators have made toward understanding the role of gender.

**PEAC 7240** Indigenous World Views and Approaches to Peacebuilding Cr.Hrs.3

Examines indigenous models of peacebuilding from community level to national level. Emphasis is placed on restorative processes fundamental to cohesive relationships with others. This is achieved through ceremony, empathy, compassion, conflict resolution and restoration part of the peacebuilding models of indigenous peoples.

**PEAC 7250** Restorative and Social Justice Cr.Hrs.3

Examines the principles of restorative justice, the theoretical foundations of the restorative justice movement, and the development of new restorative justice programs. Restorative justice healing, re-integration and reconciliation are explored in a variety of contexts, including colonized and postcolonial indigenous communities.

**PEAC 7260** Peace Education Cr.Hrs.3

Examines the role of peace education as students seek to make sense of complicated and perilous events in their society. The course provides students with a background in the area of social justice, peace studies and conflict resolution.

**PEAC 7280** Children and War Cr.Hrs.3

Examines the impact of international war, civil war, and



genocide on young people. The role of gender, class, and culture are explored; as well as the role of peacemakers, governments, and communities for addressing these issues. The implications for both the political socialization of children as well as how young people may be actors in political solutions will be explored.

**PEAC 7300** Special Topics 1: Children and War Cr.Hrs.3  
Examines the impact of international war, civil war and genocide on children. Today's children are tomorrow's world citizens, and their events will shape the future in unforeseeable ways. Young people are socio-economic and political agents, expressive through violence, peace work and other creative forms.

**PEAC 7400** Special Topics 2: Directed Readings in Peace and Conflict Studies Cr.Hrs.3

This course is designed for MA students in Peace and Conflict Studies. Course requirements including readings and assignments will be selected and developed by the Professor in conjunction with the students' interests.

## Pharmacology and Therapeutics

**Head:** Fiona Parkinson

**Campus Address/General Office:** A203 Chown Building,  
753 McDermot Avenue, Winnipeg, MB, R3E 0T6

**Telephone:** (204) 789 3553

**Fax:** (204) 789 3932

**Email Address:** [pharmacology@umanitoba.ca](mailto:pharmacology@umanitoba.ca)

**Website:** <http://umanitoba.ca/medicine/units/pharmacology>

**Academic Staff:** Please refer to our website for Academic staff information: [http://www.umanitoba.ca/faculties/medicine/units/pharmacology/faculty\\_members/index.html](http://www.umanitoba.ca/faculties/medicine/units/pharmacology/faculty_members/index.html)

Pharmacology is a key medical discipline dealing with the mode of action of therapeutic and recreational drugs and how the body metabolizes these drugs. The department offers both M.Sc. and Ph.D. degrees. A joint M.D.-Ph.D. program is available to students in Medicine.

### Fields of Research

Research and facilities are provided in several overlapping areas in which the department specializes. Current research interests include cardiovascular pharmacology, clinical pharmacology, hepatic pharmacology, neuropharmacology and renal pharmacology. The department is among very few pharmacology departments in North America that provide expertise and training in whole animal pharmacology.

### Research Facilities

The main research laboratories are located at two sites: the Bannatyne Campus (2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> floors of the Chown Building) and the St. Boniface Research Centre (4<sup>th</sup> floor). These locations are modern, well equipped facilities with equipment for experimentation in areas ranging from whole animal to molecular biology.

### M.Sc. in Pharmacology and Therapeutics, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Qualified students holding B.Sc., M.Sc., B.Pharm., D.V.M. or M.D. degrees may apply for entry into Graduate Programs. Ancillary work in Pharmacology may be arranged for students pursuing their major studies in related departments.

### Application Deadlines

The Department of Pharmacology and Therapeutics allows students to begin their program on either 1 September or 1 January. For consideration of admission for each of these start dates, Canadian students should send in their applications with complete supporting documentation to the Faculty of Graduate Studies no later than four (4) months before the intended start date. Non-Canadian students should send in their applications with complete supporting documentation to the Faculty of Graduate Studies to arrive no later than seven (7) months before the intended start date.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Normally, a student will have a prospective advisor identified as a requirement for admission. Unique to our department, some students may enter into the research rotation program of the department in which the student spends two terms of three months in separate laboratories in order to gain experience in multiple techniques/areas. An advisor would be identified following these rotations. Course requirements will depend on prior degree held and research experience. Year 1 courses may include Drugs and human disease (PHAC 4030/4040 (6 credit hours), Cell Biology IMED 7090 (6 credit hours), Physiology PHGY 7240 (6 credit hours) and Fundamentals of Neuroscience IMED 7100 (6 credit hours). Year 2 courses include Pharmacology PHAC 7130 (6 credit hours). Normally, one Statistics Course (3 credit hours) and at least one Seminar Course 1 (3 credit hours) are required. These may be taken at anytime in the program. In each year of the program students are expected to attend weekly seminars and present an oral research presentation on their work. At the end of each year, for the first two years, students take an oral exam which encompasses the year's course activities. Seminar courses include Cardiovascular Regulation and Drug Action PHAC 7040, Drug Distribution, Metabolism and Excretion PHAC 7060, Neuropharmacology PHAC 7160, Recent Advances in Pharmacology PHAC 7180, Pharmacokinetics of Drug Disposition PHAC 7190, Liver Pharmacology PHAC 7200, Clinical Trial Design PHAC 7210 and Molecular Pharmacology PHAC 7220.

Second language reading requirement: none

Expected time to graduate: 2 – 3 years



### Ph.D. in Pharmacology and Therapeutics, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. A joint M.D.-Ph.D. program is available for students enrolled in Medicine.

### Application Deadlines

The Department of Pharmacology and Therapeutics allows students to begin their program on either 1 September or 1 January. For admission for each of these start dates, Canadian students should send in their applications with complete supporting documentation to the Department of Pharmacology and Therapeutics no later than four (4) months before the intended start date. Non-Canadian students should send in their applications with complete supporting documentation to the Department of Pharmacology and Therapeutics to arrive no later than seven (7) months before the intended start date.

### Program Requirements

Program requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Course requirements will depend on prior degree held and research experience. Entry with a B.Sc. (Hon) degree (or 4 year equivalent) may require a course schedule similar to that described for the M.Sc. degree above. Normally at least 3 seminar courses are required. Students entering with a graduate degree (M.Sc.) will have a course schedule which is dependent on previous course work.

Second language requirement: none

Expected time to graduation: 3 – 5 years

## Pharmacology and Therapeutics -PHAC 7000 Level

### PHAC 7040 Cardiovascular Regulation and Drug Action Cr.Hrs.3

(Formerly 089.704) The normal homeostatic regulation of the cardiovascular system, its modification by drugs, and the sites and characteristics of drug actions affecting the cardiovascular system.

### PHAC 7060 Drug, Distribution, Metabolism, and Excretion Cr.Hrs.3

(Formerly 089.706) The mechanisms by which the body handles foreign chemicals and their effects on the characteristics of drug action.

### PHAC 7110 Topics in Pharmacology Cr.Hrs.6

(Formerly 089.711) Short research projects on various properties and effects of newer drugs. Presentation of oral and written reports by graduate students on research conducted. Open only to graduate students in Pharmacology.

### PHAC 7130 Pharmacology Cr.Hrs.6

(Formerly 089.713) Three hours a week both terms. Pharmacodynamics of the more important groups of drugs, the factors which control and modify their effects, and the basis for rational selection and administration of drugs in the treatment of disease. Prerequisite: permission of the department.

### PHAC 7160 Neuropharmacology Cr.Hrs.3

(Formerly 089.716) Seminars, tutorials and selected readings on topics concerning the mechanisms whereby drugs alter central and peripheral nervous activity. These will include drug modification of cellular excitability, neurotransmission and brain function.

### PHAC 7180 Recent Advances in Pharmacology Cr.Hrs.3

(Formerly 089.718) Lectures given by staff, followed by group discussions on current research, new developments in drugs and re-evaluation of currently employed drugs, their mechanism of action, etc. Three hours per week both terms. Open only to graduate students in Pharmacology.

### PHAC 7190 Pharmacokinetics of Drug Disposition Cr.Hrs.3

(Formerly 089.719) Lectures and problem-solving sessions directed at appropriate modelling of the disposition of drugs in the body.

### PHAC 7200 Pharmacology of the Liver Cr.Hrs.3

(Formerly 089.720) Seminars, tutorials and selected readings on topics related to hepatic functions emphasizing the integrative role of the liver in homeostasis including vascular, autonomic and metabolic functions, toxicology and therapeutic aspects.

### PHAC 7210 Clinical Trial Design Cr.Hrs.3

(Formerly 089.721) Course designed to evaluate the essential elements of clinical trials as the basis for determining the potential value of interventions advocated for the treatment of diseases in humans. The format will include assigned readings, lectures, discussion and assignment preparation. Prerequisite: Undergraduate degree in the health sciences - previous related experience or relevant course credits will be considered as surrogate qualification to an undergraduate health sciences degree.

### PHAC 7220 Molecular Pharmacology Cr.Hrs.3

(Formerly 089.722) Lectures, seminars and selected readings on the mechanism of action of therapeutic and recreational drugs. Topics will include several categories of drug receptors and associated signal transducers in the context of drug action.

### PHAC 7230 Fundamental in Pharmacology for Health Care I Cr.Hrs.3

This course will build on foundational knowledge of human physiology and examine basic pharmacokinetic (drug metabolism) and pharmacodynamic (drug action) principles of specific drug classes related to the autonomic nervous system, cardiovascular system (edema, hypertension, arrhythmia, angina, blood clotting, heart failure, hyperlipidemia), diabetes, thyroid, inflammation and pain. Remaining major drug classes will be covered in PHAC 7240. Students may take one or both courses. Taking both courses must be done in the same academic year (Sept to April) or with permission from the Department Head. Course delivery will involve lectures followed by clinical case-based



tutorials.

**PHAC 7240** Fundamentals in Pharmacology for Health Care II Cr.Hrs.3

This course will build on foundational knowledge of human physiology and examine basic pharmacokinetic (drug metabolism) and pharmacodynamic (drug action) principles of specific drug classes related to the central nervous system (depression, psychosis, anxiety, epilepsy, movement disorders (e.g. Parkinson's)), infection (bacterial, viral, fungal), cancer, asthma, allergy, osteoporosis, gastrointestinal system, reproduction and special topics (pregnancy, geriatrics, drugs of abuse). Remaining major drug classes will be covered in PHAC 7230. Students may take one or both courses. Taking both courses must be done in the same academic year (Sept to April) or with permission from the Department Head. Course delivery will involve lectures followed by clinical case-based tutorials.

## Pharmacy

**Dean:** Neal M. Davies

**Associate Dean(s):** (Research): Yuewen Gong

**Program Director:** Hope Anderson

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**Website:** <http://umanitoba.ca/pharmacy/programs>

**Academic Staff:** Please see our website for Academic staff information: [http://umanitoba.ca/faculties/pharmacy/staff/academic\\_staff.html](http://umanitoba.ca/faculties/pharmacy/staff/academic_staff.html)

Programs are offered leading to the degrees of Master of Science and Doctor of Philosophy. Thesis based research projects may be undertaken in the following fields of pharmaceutical sciences: pharmaceuticals, biopharmaceuticals, pharmacokinetics, pharmaceutical and medicinal chemistry, pharmaceutical microbiology, toxicology, pharmacognosy and in the clinically related areas of pharmacoepidemiology, and pharmaceutical policy.

### Fields of Research

There are three established research groups: drug discovery and development, drug policy, and antibiotic resistance. Expertise in these areas include dosage form development, geriatrics, medicinal chemistry, natural health products, toxicology, photochemistry, pharmacokinetics and pharmacodynamics, antibiotics, nephrology, pharmacoepidemiology, epidemiology, health policy, and clinical pharmacy practice. Two teaching hospitals, the Health Sciences Centre and St. Boniface General Hospital, are involved with pharmacy research in the faculty.

Collaborative research programs are conducted among other university departments including Anatomy, Community Health Sciences, Pharmacology, Physiology, Medical

Microbiology, Pediatrics and Child Health, Internal Medicine, Cell Biology, and Canadian Centre for Agri-Food Research in Health and Medicine (CCARM). Funding sources include the Canadian Institute of Health Research, health related research grants, and pharmaceutical industry.

### Research Facilities

State-of-the-art equipment is available, including a wide range of biological, biochemical, chemical and microbiological instrumentation and computerization. Relevant pharmaceutical, chemical and medical publications are available in The Neal John Maclean Health Sciences and the Sciences and Technology Libraries; online search facilities are available through the University e-Library system.

### M.Sc. in Pharmacy, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Students who do not possess the requirements for entry directly into the graduate program must take a pre Master's program of courses which will be individually prescribed. Please contact the Faculty for further information.

To enter the Master's program directly a student must have a B.Sc. degree in Pharmacy from the University of Manitoba or equivalent. Students from another faculty with a degree in a subject relevant to their research area will also be considered for graduate research.

Admission to the M.Sc program depends upon the availability and willingness of a Faculty of Pharmacy faculty member to supervise the student, and resources to support the student's research. Thus, applicants should negotiate a tentative position with a Faculty of Pharmacy professor/researcher, prior to submitting a formal application to the Faculty of Graduate Studies.

### Application Deadlines

Start Date	Canadian/U.S.	International
Regular (September)	June 1	March 1
Winter (January)	October 1	July 1
Spring (May)	February 1	November 1
Summer (July)	April 1	January 1

### Program Requirements

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. All programs are established on an individual basis; the following general principles apply:

- Course work and original thesis are required.
- All students are required to complete the Pharmacy Seminar 1 and 2 courses (PHRM 7160 is a prerequisite for PHRM 7170).



- Seminar presentations by graduate students, post-doctoral fellows, research associates, staff or invited lecturers are considered part of the program and must be attended by all graduate students.
- Students are expected to enroll on a 12-month basis and conduct research during the summer months.
- The minimum period of time necessary for the completion of the program is two years.

Second language reading requirement: none

Expected time to graduate: 2-3 years

### Ph.D. in Pharmacy, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. The normal procedure for a candidate is to complete a M.Sc. degree first. However, after one year of study towards the M.Sc. degree, if excellent performance is evident, a student may request a transfer to the doctoral program.

Admission to the Ph.D. program depends upon the availability and willingness of a Faculty of Pharmacy faculty member to supervise the student, and resources to support the student's research. Thus, applicants should negotiate a tentative position with a Faculty of Pharmacy professor/researcher, prior to submitting a formal application to the Faculty of Graduate Studies.

Application Deadlines – as per the M.Sc. program in Pharmacy.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. A minimum of three years is required for the Ph.D. degree. The minimum number of courses required for the Ph.D. is 24 credit hours (18 at the 700/7000 level) beyond the B.Sc. (Hons.) or 12 credit hours at the 700/7000 level beyond the M.Sc. All Ph.D. students are required to present a research seminar annually.

Second language requirement: none

Expected time to graduation: 3 - 5 years

### Pharmacy

**PHRM 7080** Biopharmaceutics and Relevant Pharmacokinetics Cr.Hrs.3  
(Formerly 046.708) Lecture course on biopharmaceutics with particular emphasis on the application of pharmacokinetic

principles in the design of conventional and sustained-release drug dosage forms, assessment of drug bioavailability, and selection of dosage regimens.

**PHRM 7120** Medical and Scientific Writing Cr.Hrs.3  
(Formerly 046.712) Lectures and exercises on the preparation of medical and scientific manuscripts, including papers for publication or oral presentation, progress reports, reviews, short papers, grant applications and similar projects.

**PHRM 7130** Novel Drug Delivery Systems Cr.Hrs.3  
(Formerly 046.713) Advanced course dealing with the role of drugs and drug products in the treatment of disease with emphasis on pharmaceutics and physical pharmacy. Current and future status of drug delivery systems, their design and evaluation will also be examined.

**PHRM 7160** Pharmacy Seminar 1 Cr.Hrs.3  
(Formerly 046.716) Seminars and lectures on selected topics in pharmacy. Students are required to present both oral and written reports on research topics.

**PHRM 7170** Pharmacy Seminar 2 Cr.Hrs.3  
(Formerly 046.717) Lectures and group discussions on recent developments in pharmaceutical fields. Students are required to give an oral presentation. (Prerequisite: PHRM 7160)

**PHRM 7180** Pharmaceutical Implications of Biotechnology Cr.Hrs.3  
(Formerly 046.718) Introduction to biotechnology in pharmaceutical sciences and pharmacy. Students will be introduced to concepts from molecular biology, immunology, biotechnology and pharmacogenomics. Implications of biotechnology in pharmaceutical biopharmaceutical research.

### Philosophy

**Head:** Carl Matheson

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**Academic Staff:** Please see our website for Academic staff information: <http://umanitoba.ca/arts/departments/philosophy>

At the present time, the University of Manitoba offers only the M.A. degree in philosophy. Graduates of this program have been successful in gaining entry to some of the leading doctoral programs in philosophy in Canada, the USA and other continents. Approximately 40 Manitoba graduates are now in tenure-track faculty positions in philosophy in universities across North America. Other graduates have pursued careers in law, management and other fields.

### Fields of Research

The Department of Philosophy offers courses in all the major areas of philosophy: the history of philosophy (including



twentieth-century European philosophy), logic, epistemology, metaphysics, ethics, philosophy of religion, philosophy of law, philosophy of science, philosophy of language, social philosophy, political philosophy, aesthetics, and the philosophy of mind. The dominant orientation of the Department is analytic. Areas of greatest strength are: metaphysics, history and philosophy of science, history of philosophy, ethics, epistemology, social and political philosophy.

### **M.A. in Philosophy, Admission**

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Contact the Department of Philosophy for further information.

### **Application Deadlines**

The Department of Philosophy allows students entering the M.A. program to commence their studies on either 1 September or 1 January. Students entering the Pre-Master's program will usually find it necessary to commence their studies on 1 September. Canadian/U.S. students should send applications for admission, with complete supporting documentation, to the Faculty of Graduate Studies, not later than four (4) months prior to the intended start date of their program of study. International students should send applications, with complete supporting documentation, to the Faculty of Graduate Studies, not later than nine (9) months prior to their intended start date.

Those applying for major financial awards offered to entering students should apply directly to the Department of Philosophy, using the application form for the University of Manitoba Graduate Fellowship and including a sample of their recent philosophical writing, not later than January 15 for programs of study commencing in September.

### **Program Requirements**

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students have three options available to them:

- 15 credit hours in Philosophy, and a major thesis; or
- 18 credit hours in Philosophy, and two research papers; or
- 24 credit hours in Philosophy.

Second Language Reading Requirement: A reading knowledge of one foreign language will be required if the thesis topic requires it.

Expected Time to Graduate: Students with undergraduate concentration in Philosophy equivalent to approximately nine full courses (54 credit hours) can complete the M.A. degree in one year. Students with a lesser degree of undergraduate

concentration will need more than one year to complete the degree.

### **Ph.D. in Philosophy,**

The Department of Philosophy does not currently offer a Ph.D. Program.

### **Philosophy**

**PHIL 7110** Graduate Seminar Cr.Hrs.6  
(Formerly 015.711) Not currently offered.

**PHIL 7120** Graduate Reading 1 Cr.Hrs.3  
(Formerly 015.712) A reading course for graduate students in philosophy. Subject matter may be arranged to suit the special needs and interests of students; the course might, for example, be devoted to modal logic, or the free will problem, the ontological argument, phenomenology, the philosophy of W.V. Quine, etc. As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 7130** Graduate Reading 2 Cr.Hrs.3  
(Formerly 015.713) A reading course for graduate students in philosophy, similar to PHIL 7120 (or 015.712). As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 7140** Epistemology 1 Cr.Hrs.3  
(Formerly 015.714) A study of selected topics in epistemology.

**PHIL 7150** Epistemology 2 Cr.Hrs.3  
(Formerly 015.715) A study of selected problems in epistemology.

**PHIL 7160** Metaphysics 1 Cr.Hrs.3  
(Formerly 015.716) A study of selected topics in metaphysics.

**PHIL 7170** Metaphysics 2 Cr.Hrs.3  
(Formerly 015.717) A study of selected problems in metaphysics.

**PHIL 7180** Graduate Reading 3 Cr.Hrs.3  
(Formerly 015.718) A reading course for graduate students in philosophy, similar to PHIL 7120 (or 015.712). As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 7190** Graduate Reading 4 Cr.Hrs.3  
(Formerly 015.719) A reading course for graduate students in philosophy, similar to PHIL 7120 (or 015.712). As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 7200** Topics in Ethics 1 Cr.Hrs.3  
(Formerly 015.720) Basic topics in moral theory. Readings will include contemporary articles and books. As the course content will vary from year to year, students may take this course more than once for credit.



**PHIL 7210** Topics in Ethics 2 Cr.Hrs.3  
(Formerly 015.721) Basic topics in moral theory. Readings will include contemporary articles and books. As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 7230** Topics in Logic and the Philosophy of Logic 2 Cr.Hrs.3  
(Formerly 015.723) Selected topics in mathematical logic, inductive logic, the philosophy of logic, and the methodology of the natural and formal sciences. Students may not hold credit for both PHIL 7230 (or 015.723) and the former 015.705. As the course content will vary from year to year, students may take this course more than once for credit.

**PHIL 7400** Independent Research Paper 1 Cr.Hrs.0  
This course is for students taking Option B in the M.A. program in Philosophy. The student will supply a paper with original research under the guidance of the research paper advisor. Course graded Pass/Fail.

**PHIL 7410** Independent Research Paper 2 Cr.Hrs.0  
This course is for students taking Option B in the M.A. program in Philosophy. The student will supply a paper with original research under the guidance of the research paper advisor. Course graded Pass/Fail.

## Physical Therapy

**Head:** Jenneth Swinamer

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**Website:** <http://umanitoba.ca/medrehab/pt>

**Academic Staff:** Please refer to our website for Academic staff information: [http://umanitoba.ca/medrehab/pt\\_staff.html](http://umanitoba.ca/medrehab/pt_staff.html)

The Master of Physical Therapy (M.P.T.) is an entry-to-practice education credential that is for individuals who do not have a previous degree in physical therapy and/or for those individuals who are not eligible to practice in Canada with their current academic preparation.

The Department of Physical Therapy, University of Manitoba is seeking accreditation by Physiotherapy Education Accreditation Canada (PEAC) for the Master of Physical Therapy program. The Department has submitted a letter of intent to participate in the pre-accreditation process. The pre-accreditation process denotes an affiliation with PEAC and indicates that the education program is considering accreditation standards in its planning stages. Submission of the letter of intent and participation in the pre-accreditation process does not assure that the program will be granted accreditation status when the final program is implemented.

### Admission

The following is a summary of the admission requirements. Equivalent academic courses completed at the University of Manitoba or recognized universities elsewhere will be considered. All admission requirements, as well as application deadline dates and forms, are included in the applicant information available from the School of Medical Rehabilitation website: <http://umanitoba.ca/medrehab/pt>

Completion of a previous undergraduate degree, in any area of study, minimum grade point average of 3.25 in the last 60 credit hours of study; successful completion of at least 24 credit hours in one regular fall/winter session (from September to April); equivalent IB and/or AP courses will be accepted in lieu of prerequisite courses; successful completion of the Multiple Mini-Interview; a minimum grade of a 3.0 or a "B" in the following prerequisite courses:\*

Human Anatomy (3 credit hours)

Human Physiology (3 credit hours)

Introductory Biology with genetics content (3 credit hours)

Introductory Psychology (6 credit hours)

Childhood Psychology (3 credit hours)

Developmental Psychology Adolescence to Old Age (3 credit hours)

Introductory Statistics (3 credit hours)

English Literature (6 credit hours)

\*All prerequisite courses need to be completed by the fall term in the year prior to entry.

### Application Deadline

The final date for receipt of applications for admission is November 15.

### Program Requirements

Program requirements are those of the Faculty of Graduate Studies, found in the Graduate Studies Regulations section of this Calendar. M.P.T. program Supplemental Regulations are available on the Physical Therapy, School of Medical Rehabilitation website: [http://umanitoba.ca/faculties/graduate\\_studies/media/Physical\\_Therapy\\_2011\\_01.pdf](http://umanitoba.ca/faculties/graduate_studies/media/Physical_Therapy_2011_01.pdf)

**English Language Proficiency:** For those not educated in English, the Department of Physical Therapy complies with the English language requirements of Canadian Alliance of Physiotherapy Regulators (<http://www.alliancept.org/>). These minimum scores are required to be considered eligible to sit the national Physiotherapy Competency Examination upon graduation, in order to practice safely in Canada. Details are



available on the Physical Therapy, School of Medical Rehabilitation website:  
[http://umanitoba.ca/faculties/medicine/units/medrehab/pt\\_pt\\_english.html](http://umanitoba.ca/faculties/medicine/units/medrehab/pt_pt_english.html)

Expected time to graduate: 2 years

Students in the M.P.T. program must complete 102 credit hours of course work. All academic and clinical placement courses and a professional portfolio must be successfully completed in order to graduate.

Clinical placements are an integral part of the M.P.T. program and typically follow major academic components to consolidate knowledge and skills learned in class.

Student physical therapists are required to provide a health history and immunization record. A student will not be permitted to attend clinical placements until all health, immunization, CPR, mask fit and records check requirements are met.

**Health Requirements:** Standard Health Record Form Packages are sent to new Physical Therapy students upon acceptance into the program. New students in Physical Therapy are required to return forms to their department by dates published yearly in the Health Record Form Packages. Second year students are required annually to review and update immunizations as necessary.

**Cardiopulmonary Resuscitation Certification:** All students of the Department of Physical Therapy are required to obtain certification in cardiopulmonary resuscitation. Certification must be at the Basic Rescuer Level. New students in the program must provide proof of certification within the first 2 weeks of classes of the academic year in which they commence classes. This certification must have an issue date on or after July 1 of the year the student commences classes in the program. Second year students must provide proof of re-certification by October 1 of their second year in the program. This certification must have an issue date during or after the last week of August of the current year. Certification must remain current for all fieldwork experiences.

**Mask Fit Certification:** Clinical education sites require students to maintain mask fit certification. Information on acquiring this certification is provided to new students with the Health Record Form Packages. All students are required to maintain mask fit certification throughout the program.

**Criminal Record Check and Child Abuse Registry Check:** Students are advised that clinical education sites require that students complete a Criminal Record Check and a Child Abuse Registry Check. New students in the Master of Physical Therapy program must provide results of a Child Abuse Registry Check and a Criminal Record Check within the first 2 weeks of classes of the academic year in which they commence classes. Both checks must have an issue date after August 1 of the year the student commences classes in the program. Second year students must provide updated results by October 1 of their second year in the

program. Both checks must have an issue date during or after the last week of August of the current year.

## Physical Therapy

**PT 6100** Theoretical Basis of Physical Therapy Practice Cr.Hrs.5

Through lecture and seminars, students are introduced to the theory of physical therapy knowledge, skills, attitudes and behaviours. Course content will include conceptual frameworks, principles surrounding safe and ethical professional conduct in the current health care environment.

**PT 6110** Foundations to Evidenced-Based Practice 1 Cr.Hrs.1

Students will learn to critically evaluate the evidence for physical therapy practice and rehabilitation and will be challenged to become involved in contributing to the evidence for their future practice.

**PT 6120** Clinical Skills for Physical Therapy Assessment Cr. Hrs. 4

Through lecture, tutorial and laboratory sessions, students are introduced to physical therapy assessment skills across the lifespan. Basic assessment of physical, psychosocial and cognitive abilities which impact on activity and participation at the individual and community level will be covered.

**PT 6130** Applied Sciences for Physical Therapy 1 Cr. Hrs.4

Through lecture, tutorial and laboratory sessions, students will learn the application of exercise and pain physiology to body structure and function and how it relates to activity and participation.

**PT 6140** Anatomy Cr.Hrs.3

Through lecture and laboratory sessions, students learn detailed musculoskeletal anatomy of the upper and lower limbs, head, neck and trunk. Joints, ligaments, muscles, nerves and vessels are included, and integration of structure and function is emphasized. Students also review the gross anatomy of the cardiorespiratory system and the abdominopelvic viscera, and are introduced to the anatomy of the spinal cord and peripheral nerves relevant to reflex activity.

**PT 6190** Clinical Education Cr.Hrs.1

One week introductory experiential learning period in the clinical community with 3-4 hours of preparatory sessions prior to the week, and 3-4 hours of follow up including reflective journal. Course evaluated on pass/fail.

**PT 6221** Clinical Skills for Physical Therapy in Neuromusculoskeletal Conditions 1 Cr.Hrs.6

Through lecture, tutorial and laboratory sessions, students apply physical therapy assessment, diagnostic and treatment skills for upper quadrant neuromusculoskeletal conditions across the lifespan.

**PT 6222** Clinical Skills for Physical Therapy in



Neuromusculoskeletal Conditions 2 Cr.Hrs.4  
Through lecture, tutorial and laboratory sessions, students apply physical therapy assessment, diagnostic and treatment skills for lower quadrant neuromusculoskeletal conditions across the lifespan.

**PT 6230** Applied Sciences for Physical Therapy 2 Cr. Hrs. 6  
Through lecture, tutorial and laboratory sessions, students will learn the application of anatomy, biomechanics, physiology, pathology and exercise to the neuromusculoskeletal system. Scientific and medical theoretical basis for physical therapy intervention will be covered.

**PT 6250** Integrated Practice for Neuromusculoskeletal Conditions Cr.Hrs.3  
Students integrate relevant information for physical therapy management of neuromusculoskeletal conditions through small group work. Case studies may include but are not limited to: rheumatoid conditions, osteoporosis, thermal injuries, amputations, pregnancy, chronic pain syndrome, fibromyalgia syndrome and hemophilia.

**PT 6260** Physiotherapy Practice and Professional Issues 1 Cr. Hrs.3  
Through lecture and tutorial sessions, students evaluate their clinical learning record and provide reflection on their recent clinical placement, and address various professional topics to build on their knowledge and application of business, ethical and legal principles for physiotherapy practice.

**PT 6291** Neuromusculoskeletal Clinical Education 1 Cr.Hrs.6  
First of two six-week experiential learning periods in the clinical community, providing opportunity for students to assess and treat clients with musculoskeletal disorders under supervision. Includes 3-4 hours of preparatory sessions prior to the placements, and 3-4 hours of follow up including debriefing group discussion and presentation of reflective journals.

**PT 6292** Neuromusculoskeletal Clinical Education 2 Cr.Hrs.6  
Second of two six-week experiential learning periods in the clinical community, providing opportunity for students to assess and treat clients with neuromusculoskeletal disorders under supervision. Pre-requisite **PT 6291**.

**PT 6310** Foundations to Evidenced-Based Practice 2 Cr. Hrs.2  
Students will learn to identify appropriate research and /or evaluation questions and appropriate methodologies for the rehabilitation context and the general process of conducting a research/evaluation study to facilitate future participation in research.

**PT 7121** Clinical Skills for Physical Therapy Neurological Conditions Cr. Hrs.5  
Through lecture, tutorial and laboratory sessions, students apply physical therapy assessment, diagnostic and treatment skills for neurological conditions across the

lifespan.

**PT 7122** Clinical Skills for Physical Therapy Cardiorespiratory Conditions Cr. Hrs.4  
Through lecture, tutorial and laboratory sessions, students apply physical therapy assessment, diagnostic and treatment skills for cardiorespiratory conditions across the lifespan.

**PT 7130** Applied Sciences for Physical Therapy 3 Cr. Hrs.6  
Through lecture, tutorial and laboratory sessions, students will learn the application of anatomy, physiology and pathology to the neurological and cardiorespiratory systems. Scientific and medical theoretical basis for physical therapy intervention will be covered.

**PT 7150** Integrated Practice for Cardiorespiratory and Neurological Conditions Cr. Hrs.3  
Students integrate relevant information for physical therapy management of complex cardiorespiratory and neurological conditions through lectures, labs and small group work with a focus on interprofessional collaborative practice. Case studies may include but are not limited to: geriatrics, developmental disorders, spinal cord injuries, ARDS, critical care, etc.

**PT 7160** Physiotherapy Practice and Professional Issues 2 Cr. Hrs 3  
Through lecture and tutorial sessions, students evaluate their clinical learning record and provide reflection on their recent clinical placement, and address various professional topics to build on their knowledge and application of business, ethical and legal principles for physiotherapy practice.

**PT 7291** Cardiorespiratory and Neurosciences Clinical Education 1 Cr. Hrs.6  
First of two six-week experiential learning periods in the clinical community, providing opportunity for students to assess and treat clients with cardiorespiratory disorders and neurological disorders under supervision. Includes 3-4 hours of preparatory sessions prior to the placements, and 3-4 hours of follow up including debriefing group discussion and presentation of reflective journals.

**PT 7292** Cardiorespiratory and Neurosciences Clinical Education 2 Cr. Hrs.6  
Second of two six-week experiential learning periods in the clinical community, providing opportunity for students to assess and treat clients with cardiorespiratory disorders and neurological disorders under supervision. Pre-requisite **PT 7291**.

**PT 7390** Elective Clinical Education Cr.Hrs.6  
One six-week experiential learning period in the clinical community to complement previous clinical placements, address gaps in previous clinical placements and /or to explore emerging practice roles in physiotherapy.

**PT 7400** Selectives in Advanced Physiotherapy Practice Cr. Hrs 3  
Of the three (3) topics in which advanced physiotherapy



theory and/or skills are explored with clinical applications, two topics are required: advanced manual therapy and advanced exercise assessment and prescription. Students are to select one additional topic which may include but is not limited to: acupuncture, community health, healthy aging, healthy child, non-clinical physical therapy roles, and sports injury management.

**PT 7500** Physical Therapy Evaluation/Research Project  
Cr. Hrs.6

Under the supervision of a faculty advisor the student will develop and complete a physical therapy or rehabilitation focused research or evaluation project including a formal presentation of the project.

## Physician Assistant Program

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**Academic Staff:** Please see our website for Academic staff information: <http://umanitoba.ca/faculties/medicine/education/paep/index.html>

### Physician Assistant Education Program

The PAEP offers coursework leading to the Master of Physician Assistant Studies (MPAS) degree. The Program currently accepts 12 students per year. Graduates are eligible for registration with the College of Physicians and Surgeons of Manitoba as physician assistants. Graduates are also eligible to sit for the Physician Assistant Certification Council of Canada national certification exam. Physician assistants currently work in the province of Manitoba in a variety of medical and surgical specialties. Physician assistants are also employed in the provinces of Ontario, Alberta, New Brunswick, as well as in the Canadian Forces.

Housed within the Faculties of Medicine and Graduate Studies the PAEP incorporates the concepts of student centred learning, adult learning principles, and professional education with the clinical competencies necessary for effective physician assistant practice.

### Fields of Research

The Program faculty's research focus lies in the area of physician assistant education and PA-related health policy. Students in the PAEP are required to complete a research project and are encouraged to cultivate research interests in a range of clinical and quality improvement areas.

### Research Facilities

Graduate Studies

The PAEP is housed at the Bannatyne Health Sciences campus. Students have access to the resources of the Neil John MacLean Health Sciences Library.

### Master of Physician Assistant Studies , Admission

The PAEP admission requirements are those outlined as the minimum admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar.

This Program is open to graduates of a four year Bachelor's degree, preferably in a health sciences field, from a college or university recognized by the University of Manitoba, with a minimum GPA of 3.0 in the last two full years (60 credit hours) of study. Undergraduate courses in Human Anatomy, Physiology and Biochemistry are required if they were not taken in the Bachelor's degree. Microbiology and Psychology are asset courses.

### Technical Standards Requirement

(Essential Skills and Abilities for Admission, Promotion and Graduation)

Please be advised that the Faculty of Medicine has adopted a Technical Standards Policy Document that describes the requisite skills and abilities that must be met in order to participate in the PAEP. The policy may be obtained from the PAEP office.

All applicants are required to submit 3 Application Forms: Faculty of Graduate Studies Application, PAEP Supplementary Application and Adult Criminal Records and Child Abuse Registry Self Declaration Form. All applicants must be eligible for registration with the College of Physicians and Surgeons of Manitoba on the PA Education register.

### Admission Deadlines

There is only one intake per year, at the beginning of September. Application deadline is the last working day in November each year, for admission the following September. Please visit the PAEP website for exact dates each year at

[http://umanitoba.ca/faculties/medicine/education/paep/pros\\_students/index.html](http://umanitoba.ca/faculties/medicine/education/paep/pros_students/index.html).

### Program Requirements

The PAEP is a two year program. The first year consists of 56 credit hours of coursework, delivered in 3 semesters from September - July as a combination of lecture, clinical skills training, and seminars. The second year includes 34.5 credit hours (48 weeks) of core clinical rotations. All courses in the PAEP are required major courses, and students must maintain full-time registration throughout the Program.



Second language requirement: none

Expected time to graduation: 26 months

## Physician Assistant Education Program

**PAEP 7000** Physiology and Pathophysiology for Physician Assistants Cr.Hrs.3

This brief introduction is designed to impart an understanding of normal physiological functioning of the human body. This basic science course builds upon the entry knowledge of the Physician Assistant student, by presenting the pathophysiology of disease by organ systems. The emphasis is on the homeostatic mechanisms for all the major organ systems. Evaluation will be by successful completion of exercises, class participation and written examination, demonstrating to faculty proficiency in course principles.

**PAEP 7002** Physiology and Pathophysiology for Physician Assistants II Cr.Hrs.3

A continuation of the material presented in Physiology and Pathophysiology for Physician Assistants. A basic science course which builds upon the entry knowledge of the PAEP learner by presenting normal physiology and the pathophysiology for disease by organ systems. Prerequisite: Admission to PAEP Year 1

**PAEP 7010** Human Anatomy for Physician Assistants Cr.Hrs.3

This brief comprehensive introduction is designed to impart an understanding of gross functional anatomy of the human body. This basic science course builds upon the entry knowledge of the student by presenting clinical human anatomy, correlated to clinical applications, assessment and pathology of disease. Evaluation will be by successful completion of exercises, class participation and written examination, demonstrating to faculty proficiency in course principles.

**PAEP 7030** Professional Studies of Physician Assistants Cr.Hrs.3

This course is designed to provide the student with an understanding of the role the Physician Assistant plays within the structure of the Canadian Health Care System. This introduction is designed to impart an understanding of the interaction between the various stakeholders. Ethical considerations in health care and the legal aspects of the PA role in Canada will be addressed. Evaluation will be by successful completion of a presentation (evaluated by classmates), participation in ethical problem solving exercises and written examination, demonstrating to faculty proficiency in course principles. Students are expected to submit a research paper on an ethics topic of choice and write a short-answer examination at the end of the course.

**PAEP 7042** Biochemistry for Physician Assistants Cr.Hrs.1  
A brief introduction to medical biochemistry.

**PAEP 7044** Statistics for Physician Assistants Cr.Hrs.1  
A brief introduction to biostatistics, epidemiology, and public health.

**PAEP 7046** Genetics for Physician Assistants Cr.Hrs.1  
A brief introduction to medical genetics.

**PAEP 7048** Pediatrics for Physician Assistants Cr.Hrs.3  
A brief, comprehensive didactic introduction to the field of obstetrics and gynecology designed to prepare the physician assistant to diagnose and treat, within his or her scope of practice, common obstetrics and gynecology conditions as would be encountered in a primary care setting. Prerequisite: Successful completion of MPAS year 1.

**PAEP 7050** Obstetrics and Gynecology for Physician Assistants Cr.Hrs.3  
A brief, comprehensive didactic introduction to the field of obstetrics and gynecology designed to prepare the physician assistant to diagnose and treat, within his or her scope of practice, common obstetrics and gynecology conditions as would be encountered in a primary care setting. Prerequisite: Successful completion of MPAS year 1.

**PAEP 7052** Patient Assessment for Physician Assistants I Cr.Hrs.2

A comprehensive introduction to the clinical assessment of a patient, delivered as a group of three courses. Part I introduces basic history-taking and physical exam skills. Patient Assessment II and Patient Assessment III extend these skills to other clinical settings.

**PAEP 7054** Patient Assessment for Physician Assistants II Cr.Hrs.2

Continues developing the skills in history taking and physical examination introduced in patient Assessment for Pas I. Learners are introduced to the Standardized Patient Program. Prerequisite: Admissions to PAEP Year 1.

**PAEP 7056** Patient Assessment for Physician Assistants III Cr.Hrs.2

A brief, comprehensive introduction to diagnostic imaging techniques and interpretation of diagnostic images designed to enable Physician Assistants, within their scope of practice, to diagnose and treat medical, surgical, and infectious disease. Prerequisite: Admission to PAEP Year 1.

**PAEP 7068** Adult Medicine for Physician Assistants 1 Cr.Hrs.6

A comprehensive, system-based introduction to the clinical disciplines of medicine. Adult Medicine I is the first part of a two-course sequence; content areas include endocrinological, gastrointestinal and neurological, medicine, ophthalmology, and hematology/oncology.

**PAEP 7072** Maternal and Child Health for Physician Assistants I Cr.Hrs.2

A brief, comprehensive introduction to obstetrics and pediatrics designed to impart an understanding of normal pregnancy and development and to allow the Physician Assistant, within his or her scope of practice, to diagnose and treat medical, surgical, infectious and developmental conditions within the fields of obstetrics and pediatrics. Prerequisite: Admissions to PAEP Year 1

**PAEP 7074** Maternal and Child Health for Physician Assistants II Cr.Hrs.2

A brief, comprehensive introduction to obstetrics and pediatrics designed to impart an understanding of normal pregnancy and development and to allow the Physician Assistant, within his or her scope of practice, to diagnose



and treat medical, surgical, infectious, and development conditions within the fields of obstetrics and pediatrics. Prerequisite: Admission to PAEP Yeah 1

**PAEP 7076** Maternal and Child Health for Physician Assistants III Cr.Hrs.2

A brief, comprehensive introduction to obstetrics and paediatrics designed to impart an understanding of normal pregnancy and development and to allow the Physician Assistant, within his or her scope of practice, to diagnose and treat medical, surgical, infectious, and developmental conditions within the fields of obstetrics and paediatrics. Prerequisite: Admission to PAEP Year 1

**PAEP 7078** Adult Medicine for Physician Assistants II Cr.Hrs.6

A comprehensive, system-based introduction to the clinical disciplines of medicine. Adult Medicine II is the second part of a two-course sequence; content areas include cardiovascular, musculoskeletal, renal, dermatologic and respiratory medicine, and otolaryngology.

**PAEP 7082** Diagnostic Imaging for Physician Assistants Cr.Hrs.1

A brief, comprehensive introduction to diagnostic imaging techniques and interpretation of diagnostic images designed to enable Physician Assistants, within their scope of practice, to diagnose and treat medical, surgical and infectious disease. Prerequisite: Admissions to PAEP Year 1

**PAEP 7084** Microbiology for Physician Assistants Cr.Hrs.1

A brief introduction to Medical Microbiology. Prerequisite: Admissions to PAEP Year 1.

**PAEP 7090** Principles of Psychiatry for Physician Assistants Cr.Hrs.3

A brief, comprehensive introduction designed to impart an understanding of mental and behavioral health. Based on the special needs of a patient populations, the patient's presentation and unique contributing factors, the PA will be able to evaluate and analyze the patient's needs, providing the required speciality assessment for the psychiatric patient. Evaluation will be by successful completion of a practical and written evaluation, demonstrating the faculty proficiency in the course material.

**PAEP 7100** Principles of Surgery for Physician Assistants Cr.Hrs.3

A brief, comprehensive introduction designed to impart an understanding of surgical diseases. Upon completion, the Physical Assistant student, with their scope of practice, will be able to diagnose, refer and treat the medical, surgical and infectious diseases from a surgical perspective. Evaluation will be by successful completion of a practical and written evaluation, demonstrating to faculty proficiency in the principals of surgery and application of surgical skills.

**PAEP 7110** Emergency and Critical Care for Physician Assistants Cr.Hrs.3

A brief, systems-based comprehensive introduction designed to impart an understanding of emergency and intensive care medicine. This course will equip the Physician Assistant student with the skills necessary to diagnose, refer and treat medical, surgical and infectious disease emergencies and life threatening conditions. The Advanced Cardiac Life Support (ACLS) course is a mandatory component of the Emergency and Critical Care course. It is

organized by the Department of Emergency Medicine and is designed to provide the student with advanced knowledge and experience on how to handle a cardiac arrest. Most Physician Assistant students find the course invaluable regardless of what specialty they enter. Evaluation is based on successful completion of a practical evaluation, problem solving exercises, displaying proficiency in clinical skills and a written examination, demonstrating to faculty proficiency in course principles.

**PAEP 7150** Year 1 Comprehensive Examination Cr.Hrs.0

A pass/fail, multiple choice examination designed to assess students' knowledge of clinically relevant Year 1 material prior to entry into the clinical year.

**PAEP 7200** Family Medicine for Physician Assistants Cr.Hrs.6

A brief, clinical rotation designed to impart a practical understanding of family medicine. Upon completion the Physician Assistant student will, within their scope of practice, be able to diagnose, refer and treat the medical, surgical and infectious disease conditions related to the field of family medicine.

**PAEP 7202** Family Medicine for Physician Assistants Cr.Hrs.6

A clinical rotation designed to impart a practical understanding of Family Medicine, to prepare the physician assistant, within his or her scope of practice, to diagnose and manage conditions and issues related to primary care medicine and general practice.

**PAEP 7204** Clinical Elective for Physician Assistants I Cr.Hrs.1.5

This course consists of two weeks of clinical time, offering an introduction to the clinical discipline of the Physician Assistant learner's choice. Course objectives will be developed by the learner in collaboration with PAEP faculty members.

**PAEP 7206** Clinical Elective for Physician Assistants II Cr.Hrs.1.5

This course consists of two weeks of clinical time, offering an introduction to the clinical discipline of the Physician Assistant learner's choice. Course objectives will be developed by the learner in collaboration with PAEP faculty members.

**PAEP 7210** Clinical Internal Medicine for Physician Assistants Cr.Hrs.3

A brief, clinical rotation designed to impart a practical understanding in the area of internal medicine. There will be an internal medicine speciality focus in this rotation versus the general exposure seen in Family Medicine. Upon completion, the Physician Assistant student will, within their scope of practice, be able to diagnose, refer and treat the medical, surgical and infectious conditions related to the field of internal medicine.

**PAEP 7212** External Electives for Physician Assistant Students Cr.Hrs.0

A clinical rotation of varying length designed to provide a physician assistant student not from the University of Manitoba with clinical education and training in a medical discipline of the student's choice at a University of Manitoba clinical teaching unit. Course credit is assigned by the



student's home institution.

**PAEP 7220 Clinical Surgery for Physician Assistants Cr.Hrs.3**

A brief, clinical rotation designed to impart a practical understanding of surgical diseases and surgical procedures. Upon completion, the Physician Assistant student will, within their scope of practice, be able to diagnose, refer and treat the medical, surgical and infectious conditions related to the field of clinical surgery.

**PAEP 7230 Clinical Orthopedics and Sports Medicine for Physician Assistants Cr.Hrs.3**

A brief, clinical rotation designed to impart a practical understanding of orthopedics and sports medicine practiced within this specialty. Upon completion, the Physician Assistant student will, within their scope of practice, be able to diagnose, refer and treat the medical, surgical and infectious conditions related to this field. The Physician Assistant student will become familiar with and perform commonly practiced procedures such as casting and splinting extremities, closed reduction, cast removal, joint injection, joint aspiration and surgical assisting.

**PAEP 7240 Clinical Pediatrics for Physician Assistants Cr.Hrs.3**

A brief, clinical rotation designed to impart a practical understanding of health and diseases in the field of pediatrics. Upon completion, the Physician Assistant student, within their scope of practice, will be able to diagnose, refer and treat the medical, surgical and infectious conditions related to the field of pediatric medicine.

**PAEP 7250 Clinical Psychiatry for Physician Assistants Cr.Hrs.3**

A brief, clinical rotation designed to impart a practical understanding of mental health and psychiatric disease to the Physician Assistant. Upon completion, the Physician Assistant student, within their scope of practice, will be able to diagnose, refer and treat the medical, surgical and infectious conditions related to psychiatric medicine.

**PAEP 7270 Clinical Emergency Medicine for Physician Assistants Cr.Hrs.3**

A brief, clinical rotation designed to impart a practical understanding of emergency medicine and intensive care. Upon completion, the Physician Assistant student, within their scope of practice, will be able to diagnose, refer and treat the medical, surgical and infectious conditions related to emergency medicine and critical intensive care medicine. Students with extensive emergency medical service backgrounds will be allowed to focus on a critical care rotation.

**PAEP 7280 Clinical Obstetrics and Gynecology for Physician Assistants Cr.Hrs.3**

A brief, clinical rotation in obstetrics and gynecology designed to impart a practical understanding of reproductive health. Upon completion, the Physician Assistant student, within their scope of practice, will be able to diagnose, refer and treat the medical, surgical and infectious conditions related to the field of reproductive, obstetrical and gynecologic health.

**PAEP 7290 Clinical Anesthesia for Physician Assistants Cr.Hrs.1.5**

A brief, clinical rotation designed to impart a practical

understanding of anesthesia. Upon completion, the Physician Assistant student, within their scope of practice, will be able to undertake airway management, ventilation and understand the principles of regional and general anesthesia. Students with extensive respiratory backgrounds are required to complete this rotation and display understanding and application of the Physician Assistant role in anesthesia.

**PAEP 7300 Comprehensive Assessment of Clinical Skills Cr.Hrs.0**

The Comprehensive Assessment of Clinical Skills is a comprehensive summary of clinical performance using information from PA-ITRES, mini-CEX evaluations, and observed histories/physical exams. This assessment will be graded on a pass/fail basis.

**PAEP 7350 PAEP Final Project Cr.Hrs.0**

A capstone project that may take a variety of formats as dictated by Program faculty. Students will, in consultation with a faculty mentor, develop and research a topic for presentation to faculty and peers.

## Physics and Astronomy

**Head:** K.S. Sharma

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**Telephone:** 474 9817

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**Academic Staff:** Please see our website for Academic staff information: <http://www.physics.umanitoba.ca/>

The department offers opportunities for graduate study in several experimental and theoretical fields of contemporary interest, leading to the Master of Science and Doctor of Philosophy degrees.

### Fields of Research

**Astronomy and Astrophysics:** The Formation, Evolution, and Structure of Galaxies; The Late Stages of Stellar Evolution (Neutron Stars, Magnetars, Black Holes); Supernova Remnants and our Milky Way Galaxy; Advanced genetic algorithms for astrophysical data modeling (magnetic fields in molecular clouds; HI galaxy disks; gravitational lens systems).

**Atomic, Molecular and Optical Physics:** Study of atomic and molecular interactions in dense fluids by laser light scattering and far infrared absorption; atomic collision dynamics studied using electron energy-loss spectroscopy, laser excitation techniques and time-correlated particle detection.

**Condensed Matter Physics:** Magnetic properties of materials, including their dependence on crystal structure and morphology; surface magnetism of fine particles or thin films; crystalline transformations of amorphous magnetic materials; phase transitions and critical phenomena in ferromagnetics, spin-glasses and site-disordered systems;



high  $T_c$  superconductors; mesoscopic wave physics of complex materials, including ultrasonic wave transport in strongly scattering media, Anderson localization of ultrasound, phononic crystals, field fluctuation spectroscopy, dynamic imaging in complex media, and ultrasonic characterization of soft food biomaterials; nanomagnetism, biological applications of magnetic nanoparticles, nanoparticle magnetism, magnetism in thin film systems, neutron scattering; theoretical studies of inhomogeneous soft matter; the structure and phase behaviour of block copolymers and polymer brushes; structure, phase behaviour, and order-disorder transitions in lipid bilayers and lipid mixtures.

**Mass Spectrometry:** Precise atomic mass determinations of stable and unstable nuclides; time-of-flight mass spectrometry of large molecules (particularly biomolecules) and molecular clusters.

**Physics of Nanoscale Systems:** Electronic and Optical Properties of Low-dimensional Electron Systems and Nanostructures, such as systems exhibiting quantum hall effects, quantum dots and quantum rings; physics of graphene nanostructures and related carbon systems, electronic and magnetic properties of DNA, DNA mispairs, spin dynamics and Rashba effects in quantum dots.

**Subatomic Physics:** Properties of nuclei far from stability (decay energies, atomic masses, nuclear structure); nucleon-nucleon systems (spin observables, particle production); tests of symmetry principles (charge symmetry, parity); strange quark structure of the proton; Laser and Ion Trapping; measurements of parity-violation in electron scattering and extraction of the weak mixing angle and fundamental physics with cold and ultracold neutrons.

**Theoretical Physics:** Low temperature excitations in ordered crystalline magnets; investigations of reduced dimensionality on the magnetic and electronic properties of solids; the effects of disorder on the physical properties of solids as studied using renormalization group methods, fractal geometry and random matrix theory; phase transitions and critical phenomena; theory and computer simulation of defect processes in crystalline materials; relativistic dynamics of composite system; Kaluza-Klein theory and string dynamics; evolution problems in quantum, classical and semi-classical mechanics using the rigorous methods of mathematical physics; few-body scattering theory; electromagnetic interactions in both few-body systems and complex nuclei; relativistic approaches to the nuclear many-body problem; Non-Archimedean Analysis (study of field extensions of the real numbers that also contain infinitely small and infinitely large numbers) and applications in physics; black holes and quantum gravity, quantum computation, information theory and non-linear dynamics.

**Medical Physics:** Research is also carried out at CancerCare Manitoba, the Health Sciences Centre and at the National Research Council Institute for Biodiagnostics. Functional imaging and the development of advanced imaging modalities and reconstruction algorithms, in-vivo portal dosimetry of radiation therapy; the development of low dose breast imaging systems; image guide adaptive radiotherapy and multi-objective optimization techniques; quality control

for diagnostic imaging and radiation therapy; high speed dose and image reconstruction and simulation; biomedical Magnetic Resonance Imaging and instrumentation; development of new technologies and methods for positron emission tomography (PET) imaging.

**Biophysics:** Biophysical and bioengineering approaches for studying immune cell trafficking; development of microfluidic devices for biological and medical applications; the facilities we have include cell culture, imaging, microfabrication for soft – lithography.

### Research Facilities

As an integral part of the research programs outlined above, a variety of major research facilities exist within the Department of Physics and Astronomy. These include an HP RX5670 ITANIUM2 quad CPU computer server with 96 Gb RAM, HP Smart Array 5304 controller, 28x146 Gb U320 disk subsystem, Group members access the server through a high speed, switched network, we also have a HP ZX200 ITANIUM2 development server with a 9Gb RAM, and several PCs for code development and testing. As well, the department has several ultrasonic spectrometers, including a TEMPO laser ultrasound interferometer, a high resolution mass spectrometer, four time-of-flight mass spectrometers for large ions and biomolecules with masses up to approximately 10,000 u, a S.H.E. dilution refrigerator for the production of millikelvin temperatures, a Philips X-ray diffraction, a Quantum Design PPMS 6000 magnetometer/susceptometer and a custom-designed SQUID-based magnetometer, and a local network of computers connected to the university's central computer facilities. A good machine shop and electronics shop are located in the Physics Department. Both liquid nitrogen and helium are available locally for low temperature research.

Research facilities at various national and international laboratories, including Argonne National Laboratory (Chicago), TRIUMF (Vancouver, we are now a full member of the TRIUMF consortium), Los Alamos National Laboratory (Los Alamos, N.M.), the Thomas Jefferson National Accelerator Laboratory (Newport News, VA), and the Max Planck Institute for Nuclear Physics (Heidelberg, Germany) are extensively used by members of the subatomic physics research group.

Research in Astronomy and Astrophysics makes use of data obtained with various telescopes including NASA's Chandra X-ray Observatory and the Hubble Space Telescope, and with the International Galactic Plane Survey.

Students also have access to various pieces of clinical and research related equipment at CancerCare Manitoba, the Health Sciences Centre and at the National Research Council of Canada Institute for Biodiagnostics. These include clinical linear accelerators, CT, MRI, Ultrasound, PET, and other imaging systems as well as various sources of radiation and dosimetry equipment. High performance GPU based computer and software for the simulation of radiation transport are also available.



Research in Condensed Matter Physics is undertaken at the nuclear reactors NRU (Chalk River), OPAL (Sydney) and ILL (Grenoble).

The University of Manitoba is a major institution in the Western Canada Research Computing Grid (WestGrid) and is the location of a large high performance computing cluster accessible to all researchers across Canada through Compute/Calcul Canada.

### **M.Sc. in Physics, Admission**

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. To enter the Master's program directly, a student must have an Honours B.Sc. degree in Physics and Astronomy, Mathematics and Physics, or Engineering Physics from the University of Manitoba or the equivalent. Students without the degree entrance requirements will have their undergraduate program evaluated and may be required to complete a pre-Master's program of selected University of Manitoba undergraduate courses.

### **Application Deadlines**

The Department of Physics and Astronomy allows students to begin their program on 1 September, 1 January, 1 May, or 1 July. For admission for each of these start dates, Canadian/U.S. students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than three and a half (3.5) months before the intended start date. Non-Canadian students should send their applications with complete supporting documentation to the Faculty of Graduate Studies to arrive no later than six and a half (6.5) months before the intended start date.

### **Program Requirements**

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The Department of Physics and Astronomy has certain supplementary regulations. Information about these regulations as well as a description of research programs in Physics is available at: [physics.umanitoba.ca](http://physics.umanitoba.ca)

A Master's degree in physics normally consists of both coursework and a thesis. For students in the Comprehensive Medical Physics M.Sc. program, the course load is increased and the thesis requirement is replaced by research project.

The Master's program with thesis consists of two or three courses from the 700/7000 series offered by the department or from another department offering courses suitable for the candidate's program. In special cases, courses may be drawn from the 400 series as listed. The program of study extends through a minimum period of twelve months.

Frequently two summers of research work plus one winter of research and coursework are required to complete the program. In addition to coursework, these students must submit a thesis and defend it orally.

The Comprehensive M.Sc. program in medical physics is a two-year (18-month, course work, 6-month research project) program which requires 36 credits. A clinical research project in an approved laboratory and the submission of a research report is also required. On completion of the coursework and research project, the student will be required to pass a comprehensive oral examination.

Second language reading requirement: none

Expected time to graduate: 2 years

### **Ph.D. in Physics, Admission**

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, the normal procedure to be a candidate for a Ph.D. degree is to complete an M.Sc. degree first. However, students with an honours degree from the University of Manitoba or equivalent may be accepted directly into the PhD program.

### **Application Deadlines**

The Department of Physics and Astronomy allows students to begin their program on either 1 September, 1 January, 1 May, or 1 July. For admission for each of these start dates, Canadian/U.S. students should send their applications with complete supporting documentation to the Faculty of Graduate Studies no less than three and a half (3.5) months before the intended start date. Non-Canadian students should send their applications with complete supporting documentation to the Faculty of Graduate Studies to arrive no later than six and a half (6.5) months before the intended start date.

### **Program Requirements**

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The Department of Physics and Astronomy has certain supplementary regulations. Information about these regulations as well as a description of Research Programs in Physics is available on the web: [www.physics.umanitoba.ca](http://www.physics.umanitoba.ca)

International students entering the Ph.D. program are strongly encouraged to write and obtain minimum grade of 650 on the GRE physics subject examination prior to applying for the Ph.D. program.

The main program of studies is selected from one of the major fields of research listed above in Section 2.2, and is



supplemented by an ancillary program which takes into account the student's interests and breadth of experience.

Ancillary subjects must be chosen from a field of physics distinct from the major area of study or from other departments (e.g., Mathematics) offering suitable courses. In consultation with the student, a program of study is decided by a committee with the student's advisor as chair.

Students must pass a candidacy exam and submit a thesis which describes their research work and which will be examined according to the general regulations.

Second language requirement: none

Expected time to graduation: 4 years

## Physics and Astronomy

**PHYS 7250** Seminar course in Advanced Physics Cr.Hrs.6 (Formerly 016.725) Selected topics in advanced physics may be offered from time to time by the faculty or visiting lecturers. Credit for this course will be determined by the head of the department of Physics. Prerequisite: consent of instructor.

**PHYS 7260** Mass Spectroscopy Cr.Hrs.3 (Formerly 016.726) Two lectures per week for one term. The course covers the techniques and applications of mass spectroscopy. Special emphasis is given to the general principles of ion optics for use in the design of modern instruments.

**PHYS 7360** Medical Radiation Physics Cr.Hrs.3 (Formerly 016.736) The relevant physics of the production and interaction of radiation beams used in both diagnostic and therapeutic medicine will be covered. Such beams included X- and g-rays, particle beams, visible and I.R. radiation, microwaves, and ultrasound. Prerequisite: PHYS 4560 (or 016.456) or consent of instructor.

**PHYS 7370** Radiotherapy Physics Cr.Hrs.3 (Formerly 016.737) The calculations and measurements necessary to determine the radiation dose distribution in patients receiving radiotherapy will be presented. Newer treatment modalities, e.g., pion therapy and hyperthermia will be discussed. Prerequisites: PHYS 4510 (or 016.451), PHYS 4560 (or 016.456), or consent of instructor.

**PHYS 7380** Radiation Biology Cr.Hrs.3 (Formerly 016.738) The interaction of ionizing and non-ionizing radiations with living systems. The relevance to Radiotherapy. Nuclear medicine and diagnostic radiology. Prerequisite: PHYS 1020 (or 016.102)/016.103 (or 016.121) or consent of instructor.

**PHYS 7390** Radiation Protection Cr.Hrs.3 (Formerly 016.739) Ionizing radiation including X-ray, g-ray, neutrons, alpha-, beta-, and heavy ion-particle sources, bioeffects, and protection principles are covered. Non-ionizing radiation, including laser light, radio- frequency waves, ultraviolet and infrared light, and ultrasound, sources,

bioeffects, and exposure protection guidelines are studied. Prerequisites: PHYS 7360 (or 016.736) and PHYS 7380 (or 016.738) or consent of instructor.

**PHYS 7400** Medical Imaging Cr.Hrs.3 (Formerly 016.740) Fundamental principles of image formation, analysis of the characteristics of medical images, parametric description of image quality; application to transmission radiography. Prerequisite: consent of instructor.

**PHYS 7410** Diagnostic Methods Cr.Hrs.3 (Formerly 016.741) Medical imaging in terms of signal acquisition, data processing, image reconstruction, special techniques; applications in fluoroscopy, computed tomography, radionuclide imaging, ultrasound, nuclear magnetic resonance imaging. Prerequisite: PHYS 7400 (or 016.740).

**PHYS 7440** Advanced Topics in Physics Cr.Hrs.3 (Formerly 016.744) Selected topics in advanced physics. This course may be offered from time to time by the faculty or visiting lecturers. Prerequisites: consent of instructor.

**PHYS 7460** Methods in Medical and Health Physics 1 - (Medical Imaging and Radiation Protection) Cr.Hrs.3 (Formerly 016.746) This practical course is designed to give students hands-on experience with equipment, clinical techniques and methods of analysis in medical imaging and health physics. Topics such as: dosimetry of unsealed sources, radiation shielding design and surveys, meter calibration, decontamination and plume dispersal, CT, Ultrasound, X-ray and Nuclear Medicine imaging techniques, mammography and quality assurance in medical and health physics will be covered. Students are required to take both PHYS 7460 (or 016.746) and PHYS 7470 (or 016.747) which will be offered in consecutive years. Note: only students accepted to the Medical Physics Program will be allowed to register for this course

**PHYS 7470** Methods in Medical and Health Physics 2 - (Radiotherapy and Radiation Biology) Cr.Hrs.3 (Formerly 016.747) This practical course is designed to give students hands-on experience with equipment, clinical techniques and methods of analysis in radiotherapy and radiation biology. Topics such as: error analysis and data reduction, dosimetry of ionizing radiation, radiotherapy treatment planning, calibration, HDR brachytherapy, microdosimetry and quality assurance in medical physics, will be covered. Students are required to take both PHYS 7460 (or 016.746) and PHYS 7470 (or 016.747) which will be offered in consecutive years. Note: only students accepted to the Medical Physics Program will be allowed to register for this course.

**PHYS 7500** Condensed Matter Physics 1 Cr.Hrs.3 (Formerly 016.750) The principles of electrical and vibrational properties of primarily crystalline structures. Topics include free electron theory, electron-electron interactions, screening, phonons, electron-phonon coupling and transport properties. Not to be held with the former 016.712.

**PHYS 7510** Condensed Matter Physics 2 Cr.Hrs.3 (Formerly 016.751) A comprehensive survey of advanced topics in condensed matter physics. The topics may change from year to year but include collective excitations, defects, localized states, superconductivity, Josephson effect,



superfluids, quantum Hall effect. Not to be held with the former 016.712. Prerequisite: PHYS 7500 (or 016.750) or consent of instructor.

**PHYS 7530** Physics of Magnetism Cr.Hrs.3  
(Formerly 016.753) A comprehensive survey of magnetism and magnetic materials. Topics include the origins of magnetic interactions, types of magnetic order, domain structures, magnetization processes, dynamics, thin films, applications. Not to be held with the former 016.721. Prerequisite: PHYS 7500 (or 016.750) or consent of instructor.

**PHYS 7540** Statistical Mechanics Cr.Hrs.3  
(Formerly 016.754) The principles of statistical mechanics. Topics include statistical ensembles, entropy, Fermi gas, Bose-Einstein condensation, superfluidity, phase transitions and equilibria, fluctuations, Fluctuation-Dissipation and Wiener-Khinchin theorems, liquids and dense gases. Not to be held with the former 016.719. Prerequisite: PHYS 4370 (or 016.437) or consent of instructor.

**PHYS 7550** Advanced Statistical Mechanics Cr.Hrs.3  
(Formerly 016.755) An advanced treatment of phase transitions and critical phenomena in a variety of systems. Topics include solvable models, mean field theory, Landau theory, scaling laws, series methods, renormalization group methods, linear response theory, generalized rigidity. Not to be held with the former 016.719. Prerequisite: PHYS 7540 (or 016.754) or consent of instructor.

**PHYS 7560** Relativistic Quantum Mechanics Cr.Hrs.3  
(Formerly 016.756) Relativistic single particle equations for bosons and fermions, quantization of fields, interacting fields, elementary quantum electrodynamics, covariant perturbation theory and Feynman diagrams. Not to be held with the former 016.743. Prerequisite: PHYS 7420 (or 016.742) or consent of instructor.

**PHYS 7570** Nuclear Physics Cr.Hrs.3  
(Formerly 016.757) Hadron and lepton scattering, the nucleon-nucleon interaction, nuclear structure, nuclear shell model, nuclear excitations and decay, hadronic interactions and decays, the quark model. Not to be held with the former 016.705. Prerequisite: PHYS 4510 (or 016.451) or consent of instructor.

**PHYS 7580** Advanced Topics in Nuclear Physics Cr.Hrs.3  
(Formerly 016.758) A selection of advanced topics in nuclear and intermediate energy physics. Not to be held with the former 016.706. Prerequisite: PHYS 7570 (or 016.757) or consent of instructor.

**PHYS 7590** Electromagnetic Theory Cr.Hrs.3  
(Formerly 016.759) Maxwell's equations, electromagnetic potentials, gauge conditions, conservation laws, Green function methods, diffraction theory, simple radiating systems, Lagrangian derivation of Maxwell's equations and the covariant structure of electromagnetism. Not to be held with the former 016.715.

**PHYS 7600** Applied Electromagnetism Cr.Hrs.3  
(Formerly 016.760) Wave guides and resonant cavities, charged particles collision theory, Bremsstrahlung, radiation of moving charged particles, multipole radiation. Not to be held with the former 016.715. Prerequisite: PHYS 7590 (or

016.759) or consent of instructor.

**PHYS 7630** Particle Physics Cr.Hrs.3  
(Formerly 016.763) Basic particles and interactions, symmetries and conservation laws, the quark model, deep inelastic scattering, electroweak theory, introduction to QCD. Not to be held with the former 016.730. Prerequisite: PHYS 7420 (or 016.742) or consent of instructor.

**PHYS 7660** Astronomy 1: The Phenomenology of Galaxies Cr.Hrs.3  
(Formerly 016.766) Describes astronomical standards such as intensity magnitudes, colour and metallicity; the properties of stars and the interstellar medium; galactic structure, kinematics, and the evolution of galactic components.

**PHYS 7670** Astronomy 2: Galactic Dynamics Cr.Hrs.3  
(Formerly 016.767) A continuation of PHYS 7660, this course provides mathematical descriptions of potential theory, disk dynamics and spiral structure, collisions between galaxies, and dark matter. Additional topics are galaxy evolution, large-scale structure of the universe and cosmology. Prerequisite: PHYS 7660 (or 016.766)

**PHYS 7680** Astrophysics 1: Stars Cr.Hrs.3  
(Formerly 016.768) Covers the basic physical concepts required to extract qualitative estimates of astrophysical parameters, describes several aspects of observational astronomy, and it emphasizes in a more mathematical way the astrophysics of stellar structure and evolution.

**PHYS 7690** Astrophysics 2: Interstellar Matter and Galaxies Cr.Hrs.3  
(Formerly 016.769) Emphasizes the physics of interstellar matter and dust grains, gaseous nebulae, basic hydrodynamics, shock waves, and supernova remnants. Prerequisite: PHYS 7680 (or 016.768)

**PHYS 7700** Research Project in Medical Health Physics Cr.Hrs.0  
(Formerly 016.770) Students undertake a relevant research project in an approved laboratory. At least six months of full-time research is expected. The research project report shall be submitted in a style and length as specified by the department. A comprehensive oral examination will follow the submission of the project report.

**PHYS 7710** Quantum Optics Cr.Hrs.6  
(Formerly 016.771) Matter-radiation interaction, spectral line broadening, quantization of the radiation field, degree of coherence of light; number, coherent, chaotic and squeezed states of light, quantum theory of detection, laser theory, resonance fluorescence, light scattering, non-linear quantum optics. Not to be held with the former 016.708 Prerequisite: permission of instructor

**PHYS 7720** QUANT MECH 1 Cr.Hrs.3  
Topics include the concepts and foundations of quantum mechanics, continuous and discrete symmetries, time dependent perturbation theory including interaction with electromagnetic fields and scattering theory. Prerequisite: PHYS 4380 (C+). Not to be held with the former PHYS 7420 or 016.772.



## Physiology

### M.Sc. in Physiology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

#### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

For sessions beginning:	International
September	February 1
January	August 1
May	December 1
July	February 1

#### Program Requirements

A minimum of fifteen (15) credit hours in 700/7000 level courses in Physiology. In most cases, students will be required to complete PHGY 7240 Medical Physiology (6 cr. Hrs.)

Second language reading requirement: none

Expected time to graduate: 2 - 5 years

### Ph.D. in Physiology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

#### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Department at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Department at least 7 months prior to their intended start date.

#### Program Requirements

Nine (9) credit hours beyond the requirements for the M.Sc. degree. Additional courses as deemed appropriate by the

Student's Advisory Committee, with the approval of the Physiology Graduate program Committee. Advanced Topics in Physiology (PHGY 7180) (3) is a required course for Ph.D. students.

Second language requirement: none

Expected time to graduation: 3 - 7 years

Page URL,  
<http://crscalprod1.cc.umanitoba.ca/Physiology.catx>

## Physiology

**PHGY 7010** Readings in Physiology Cr.Hrs.6  
(Formerly 090.701) Tutorial course covering recent contributions in an area of physiology related to a student's research interests.

Canadian  
Research  
July 1

**PHGY 7030** Special Physiology Cr.Hrs.6  
(Formerly 090.703) Seminar and reading course on physiology of particular systems.

November  
March 1  
May 1

**PHGY 7150** Cardiac Physiology Cr.Hrs.3  
(Formerly 090.715) Tutorial and reading course on cardiac physiology; emphasis on the energetics of cardiac contraction and its relationship to ultrastructural and biochemical properties of the heart.

**PHGY 7160** Vascular Physiology Cr.Hrs.3  
(Formerly 090.716) Lectures and seminars on physiology of blood vessels including hemodynamics, rheology of blood, and the function and structure of smooth muscle.

**PHGY 7170** Endocrine and Metabolic Physiology Cr.Hrs.3  
(Formerly 090.717) Special topics in endocrine and metabolic physiology emphasizing current concepts.

**PHGY 7180** Advanced Topics in Physiology Cr.Hrs.3  
(Formerly 090.718) Advances in selected areas of physiology, research proposals related to the students' area of interest, procedures for grant writing and refereeing grant proposals, evaluation of citations and impact factors.

**PHGY 7190** Research Topics in Physiology Cr.Hrs.3  
(Formerly 090.719) Seminars on research presentations by staff and senior students in physiology.

**PHGY 7230** Molecular and Cellular Aspects of Organ Physiology Cr.Hrs.3  
(Formerly 090.723) Tutorial course: Function of various organs in the light of current concepts regarding structure and function at the molecular and cellular level.

**PHGY 7240** Medical Physiology Cr.Hrs.6  
(Formerly 090.724) Lecture, seminar, tutorial, and demonstration course dealing with fundamental biophysical processes, function of major organ systems, and physiological control mechanisms. Pathophysiological functions and their relation to disease will be discussed where appropriate.



**PHGY 7260** Advanced Neurological Sciences Cr.Hrs.3 (Formerly 090.726) Seminar, readings and lecture course covering original research papers leading to the most significant advances in the neurological sciences. Emphasis is placed on student comprehension of major research directions in the broad field of neurological sciences. Prerequisite: PHGY 7240 (or 090.724) or equivalent and consent of instructor.

**PHGY 7270** Physiology of Striated Muscle Cr.Hrs.3 (Formerly 090.727) A lecture and seminar course dealing with the physiology and biophysics of skeletal and cardiac muscle.

**PHGY 7290** Physiology of the Airways Cr.Hrs.3 (Formerly 090.729) A lecture and seminar course dealing with the physiology of the airways in the intact animal and with the role of smooth muscle in controlling airway function. The fundamental properties of airway smooth muscle in controlling airway function will be emphasized. Prerequisite: PHGY 7240 (or 090.724) or equivalent and consent of instructor.

**PHGY 7300** Molecular Endocrinology Cr.Hrs.3 (Formerly 090.730) A lecture and seminar course on advances in molecular and cellular aspects of endocrinology and other systems. The course is taught by members of the Gene Technology Group and topics will reflect current research interests. These include the roles of hormones/growth factors in cancer, growth and development, and reproduction, and the regulation of hormone gene families. This course is designed for individuals with knowledge in the areas of molecular and/or cell biology. Prerequisite: consent of instructor.

**PHGY 7310** Principles of Electronics for Life Sciences Cr.Hrs.3 (Formerly 090.731) Lectures on basic principles of electricity and electronics of particular application to electrophysiology.

**PHGY 7320** Instrumentation for Electrophysiology Cr.Hrs.3 (Formerly 090.732) Lectures on the application of principles of electricity and electronics to electrophysiology. Prerequisite: PHGY 7310 (or 090.731).

**PHGY 7330** Physiology of Smooth Muscle Cr.Hrs.3 (Formerly 090.733) A lecture and seminar course dealing with the biophysics, electrophysiology, pharmacology and biochemistry of the smooth muscle in the major organ systems.

**PHGY 7340** Cardiovascular Electrophysiology Cr.Hrs.3 (Formerly 090.734) A comprehensive lecture and seminar course on the electrical activity of the cardiovascular system. The fundamental electrical properties of cardiac and vascular muscle cell membranes, currents and channels as studied by intracellular microelectrodes, voltage clamp and patch clamp techniques will be stressed.

**PHGY 7350** Cardiovascular Pathophysiology Cr.Hrs.3 (Formerly 090.735) A comprehensive lecture course on disease in the cardiovascular system. Topics to be covered include methods of analysis of cardiac viability, heart failure, arrhythmias, heart diseases (congenital, valvular, pericardial, cardiomyopathy), hypertension, stroke, atherosclerosis and myocardial infarction. Prerequisite: PHGY 7240 (or 090.724).

**PHGY 7360** Trends in Cardiovascular Sciences Cr.Hrs.3 (Formerly 090.736) A comprehensive seminar-based course dealing with recent advances in cardiovascular research given by local fellows and prominent scientists. Students will be expected to participate in the series and present their own research data seminar. Prerequisite: PHGY 7240 (or 090.724).

**PHGY 7370** Cardiovascular Molecular Biology Cr.Hrs.3 (Formerly 090.737) A lecture course dealing with the structure and regulation of genes responsible for normal cardiac muscle and vascular system fluctuations as well as a survey of the genetic contribution to cardio-vascular disease (atherosclerosis, hypertension, heart failure). Prerequisite: PHGY 7240 (or 090.724).

**PHGY 7380** Cardiovascular Cell Biology Cr.Hrs.3 (Formerly 090.738) A comprehensive lecture course on morphology, biochemical composition and function of the cardiac and smooth muscle cell, with particular emphasis on developmental and injury-related issues. Topics include the description of various cardiac cells and their immediate extracellular environment, intercellular communication, cardiac development, control of cell cycle, hyperplasia and hypertrophy, cardiac growth factors, mechanism of injury and cell death, regeneration, heat shock proteins and cardioprotection.

**PHGY 7390** Gene Therapy Cr.Hrs.3 (Formerly 090.739) Advanced course detailing new frontiers in the application of gene therapy and technological protocols currently utilized in treating cardiovascular diseases such as cardiomyopathy, hypertension, congenital birth defects and restenosis. Prerequisites: PHGY 7370 (or 090.737), PHGY 7380 (or 090.738) or 082.724 or permission of the course coordinator.

**PHGY 7400** Cellular and Molecular Biology of the Vascular System Cr.Hrs.3 (Formerly 090.740) This course provides current concepts in vascular biology at the molecular level as well as the pathogenesis and treatment of vascular diseases for the purpose of graduate studies. Students may also learn up-to-date techniques in research of vascular cell biology and the diagnosis of vascular diseases through laboratory demonstrations.

## Plant Science

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**Academic Staff:** Please see our website for Academic staff information: [http://umanitoba.ca/afs/plant\\_science](http://umanitoba.ca/afs/plant_science)

The Department of Plant Science is one of seven departments in the Faculty of Agricultural and Food Sciences and draws together expertise in both the applied and basic sciences. Since its origin in 1937, the Department has maintained a leading role in agricultural research in



Canada. Its achievements in rapeseed and canola breeding and in cereal breeding and cytogenetics are known worldwide. Faculty members have major research programs in agronomy and plant protection, plant breeding and genetics, and plant physiology-biochemistry (elaborated below). The Department of Plant Science maintains an active research program directed at developing superior cultivars and new production systems suited to the changing needs of Manitoba farmers and the agri-food industry.

There is a wide range of employment opportunities for M.Sc. and Ph.D. graduates from the Department of Plant Science, including research and teaching positions at universities throughout the world, research and extension positions with the federal and provincial governments and positions in private industry.

### Fields of Research

Programs of study and research are offered in the following areas, leading to the M.Sc. and Ph.D. degrees.

**Agronomy and Plant Protection:** Organic cropping systems; Long term organic vs conventional crop production systems; Farmer participatory organic crop breeding; Crop-livestock integration; Tropical agriculture. Agronomy and cropping systems research; Cover crops; Plant and soil interactions; Plant and soil management to address agricultural and environmental challenges. Weed biology, ecology and eco-physiology; Integrated weed management; Impact of management techniques on weed community assembly; Crop/weed competition; Extracellular DNA in the environment. Canola and wheat pathology; Breeding for disease resistance; Applied and molecular approaches to understanding the epidemiology of plant pathogens; Biological control and mode of action by antagonists on plant pathogens; Isolation, identification and characterization of microbial genes involved in pest control; SSH techniques in host-pathogen resistance; IPM sustainable agricultural systems. Molecular mechanisms of plant-microbe interactions, with emphasis on plant defenses and pathogen counterdefenses; Mechanisms of biological control of plant diseases; Role of secondary metabolites in plant defense and defense signalling; Role of inducers and suppressors in induced disease resistance and susceptibility.

**Plant Breeding and Genetics:** Wheat breeding and genetics; Modelling crop development and yield; Genetics of resistance to leaf spotting diseases; Development and evaluation of breeding methodologies; Genetics of herbicide resistance; Development of Fusarium Head Blight resistant germplasm; Development of wheat for fuel and feed. Perennial grain breeding including grains and oilseeds; Companion crop development; Plant growth and development and its utilization for selection in perennial crop breeding programs; Polyculture development. Hybrid rapeseed/canola cultivar development; Conventional and herbicide tolerant rapeseed/canola breeding; Development of end-use quality; Breeding and genetics of disease resistance; Brassica agronomic research. Plant genomics and molecular biology; Genetic mapping, gene cloning, gene functional analysis and molecular marker development; Gene manipulation in glucosinolates, fatty acids and seed coat colour; Resistance gene identification for blackleg,

sclerotinia and clubroot in Brassica crops. Gene expression in plants during resistant or susceptible interactions with fungal or bacterial pathogens; Genetic engineering of disease resistance; Bioinformatics.

**Plant Physiology-Biochemistry:** Physiology and molecular biology of embryogenesis; Role of hemoglobin during embryo development; Identification of candidate genes required for proper embryo formation. Physiology; Functional genomics and biotechnology of cereal crops; Plant hormone metabolism (emphasis on gibberellin); Abiotic stress tolerance; Feedstock development for bioproducts.

### Research Facilities

The Department of Plant Science has excellent research facilities including well-equipped laboratories, ample greenhouse space and controlled-environment chambers, and a horticultural-research storage building. A 60 hectare field research station is situated on campus within walking distance of the Plant Science Building. As well the Department has a 165 hectare field-research station located at Carman, Manitoba on prime agricultural soil.

### M.Sc. in Plant Science, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this *Calendar*.

### Admission Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 4 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

### Program Requirements

Research and thesis

A minimum of 15 credit hours of coursework (including PLNT 7250 Plant Science Seminar) of which at least 6 credit hours will be courses at the 700/7000 level. The 6 credit hours at the 700/7000 level cannot include PLNT 7250 Plant Science Seminar or ANSC 7500 Methodology in Agricultural and Food Sciences.

Second language reading requirement: none

Expected time to graduation: two years

### Ph.D. in Plant Science, Admission



Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this *Calendar*.

### Admission Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 4 months prior to their intended start date.

International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

### Program Requirements

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this *Calendar*. In addition, students must take PLNT 7420 Advanced Plant Science Seminar for which they must register each year of their Ph.D. program. The 12 credit hours at the 700/7000 level cannot include ANSC 7500 Methodology in Agricultural and Food Sciences.

Second language reading requirement: none

Expected time to graduation: three years

### Plant Science

**PLNT 7120** Special Problems in Plant Science Cr.Hrs.3  
Reading or assignment or research on specific aspects of crop development, crop production, weed science, plant pathology, plant biochemistry or plant physiology.  
Prerequisite: written consent of department head.

**PLNT 7130** Topics in Plant Breeding and Genetics Cr.Hrs.3  
An in-depth study of selected topics of current interest in the fields of plant breeding and genetics. Prerequisite: written consent of department head.

**PLNT 7160** Advanced Genetics Cr.Hrs.3  
Procedures and designs in genetic experimentation, the fundamentals of gene action, mutation and mutagens, linkage and recombination, extranuclear inheritance.  
Prerequisite: PLNT 4330 or consent of instructor.

**PLNT 7162** Plant Genomics Cr.Hrs.3  
Detailed analysis of advanced genomic techniques, experimental approaches, and progress in current plant genomic projects.

**PLNT 7170** Advanced Plant Breeding Cr.Hrs.3  
Advanced training in modern methods of plant breeding.  
Prerequisite: PLNT 3520 or consent of instructor.

**PLNT 7250** Plant Science Seminar Cr.Hrs.3  
Principles of oral and poster presentations, visual aid design and organization are discussed and then applied by students in presentations of their current research, and agricultural issues. Course evaluated on a pass/fail basis.

**PLNT 7340** Advanced Weed Science Cr.Hrs.3  
Weed biology and ecology in the context of weed management, covering theory, current information, investigative approaches and experimental techniques. Topics explored include: weed population biology, modelling, weed community ecology, herbicide efficacy and herbicide resistant weeds. Prerequisite: PLNT 3540 or equivalent or consent of instructor.

**PLNT 7420** Advanced Plant Science Seminar Cr.Hrs.3  
The development of a research proposal, instruction and practice in scientific writing and presentation of a seminar. For Ph.D. students only. Course evaluated on a pass/fail basis.

**PLNT 7480** Epidemiology of Plant Disease Cr.Hrs.3  
Lectures, seminars and discussions relating epidemiological principles to plant disease development and control. The course examines in-depth the interrelationships of host, pathogen and environment. Measurement of epidemiological parameters is stressed in relation to disease assessment, disease forecasting and disease management.

**PLNT 7490** Storage of Horticultural Crops Cr.Hrs.3  
Types of storage available for fruits, vegetables and ornamentals will be discussed in relation to their effects on post-harvest physiology and stored crop quality.

**PLNT 7610** Topics in Crop Physiology Cr.Hrs.3  
An in-depth study of selected topics of current interest in the field of Crop Physiology. Prerequisite: written consent of department head.

**PLNT 7612** Advanced Plant Physiology Cr.Hrs.3  
Examination of current concepts of regulation and limitations of photosynthesis, nitrogen metabolism, and assimilate partitioning in field and horticultural crops. Content will include the mode of action of plant growth regulators and herbicides in these processes. Not to be held with the former 039.764. Prerequisites: PLNT 3500, PLNT 4590 or the former 039.452 or consent of instructor.

**PLNT 7620** Topics in Agronomy Cr.Hrs.3  
An in-depth study of selected topics of current interest in the field of Agronomy. Prerequisite: written consent of department head.

**PLNT 7630** Topics in Plant Pathology Cr.Hrs.3  
An in-depth study of selected topics of current interest in the field of Plant Pathology. Prerequisite: written consent of department head.

**PLNT 7650** Specialized Plant Pathology Cr.Hrs.3  
A laboratory course permitting the student to work directly under one of the plant pathology specialists of the Agriculture and Agri-Food Canada Research Centre. It includes the study of assigned literature and preparation of seminars in specialized fields. Prerequisite: written consent of department head.

**PLNT 7660** Advanced Crop Production Cr.Hrs.3  
A lecture-seminar course to investigate environmental, crop management and genetic limitations to growth, yield formation, yield, water use efficiency and quality of field, forage and horticultural crops. Interactions will be stressed and emphasis will be placed on sustainable crop production systems. Simple and complex relationships will be



demonstrated using models. Prerequisite: consent of instructor.

**PLNT 7670** Quantitative Genetics and Plant Breeding Cr.Hrs.3

The theoretical basis of quantitative genetic variation. The genetic structure of plant breeding populations. Estimation, interpretation and use of genetic parameters in cross-pollinated and self-pollinated plant species. Variance components, genotype x environment interaction, inbreeding, heterosis, selection, heritability and combining ability. Prerequisites: PLNT 3520 and PLNT 4330 or consent of instructor.

**PLNT 7680** Plant Molecular Genetics Cr.Hrs.3

(Formerly 039.768) A synthesis of the knowledge gained from the application of molecular and classical genetics to the study of plant biology, and its impact on biotechnology. Areas of emphasis include development and physiology, and molecular plant pathology. Prerequisite: PLNT 2530 or the former 039.450 or PLNT 3140 or PLNT 4330 or equivalent or consent of instructor.

**PLNT 7690** Bioinformatics Cr.Hrs.3

An introduction to the theory, strategies, and practice of data management, analysis and utilization in molecular biology. Topics include DNA and protein sequence analysis, biological databases, genomic mapping and analysis of gene expression data. This course will include problem-solving exercises using Unix server-based software. Not to be held with PLNT 4610 (or the former 039.769). Prerequisite: PLNT 2530 (or 039.253) or the former 039.450 or PLNT 3140 (or 039.314) or PLNT 4310 or the former PLNT 4540 (or 039.454) or MBIO 3410 (or 060.341) or consent of instructor.

## Political Studies

**Head:** A/Head Steven Lecce

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The Department of Political Studies offers students a Pre-Master's year, a Master of Arts degree program, as well as a Masters in Public Administration program jointly offered with the University of Winnipeg. The program provides a solid basis for those wishing to go to doctoral studies, or for those interested in careers in law, government, the private and voluntary sectors and international organizations.

With twelve full-time [faculty members](#) and approximately thirty graduate students per year, the low student to faculty ratio provides an excellent opportunity for students to work closely with faculty in the department and for flexibility in the design of programs of study. A further attraction lies in the department's links with the [Centre for](#)

[Defence and Security Studies](#), a research institute focused on the area of security, strategic and defence studies. Since 1985, graduate students in the department have organized the annual Political Studies Students' Conference in association with the Centre for Defence and Security Studies with invited speakers including distinguished academics and specialists from across Canada and from abroad. The Duff Roblin Professor of Government and the Duff Roblin Political Studies Fellowship (established in 1998) advance the study of Canadian politics within the department and amongst its students.

### Fields of Research

The department offers courses at the pre-Master's and Master's levels in five areas of concentration: Canadian politics, international relations, public administration, political theory and comparative politics.

- Canadian Politics, including government institutions, public policy, the Charter of Rights and Freedoms and anti-discrimination legislation, indigenous politics & governance; and political parties;
- International Relations including defence and security studies, foreign and defence policy; international political economy; globalization and international organizations and policy, and colonization and decolonization;
- Comparative Politics including parties and politics, political economy, women in politics, middle east politics, politics in India, politics in Britain and politics of development, indigenous politics & indigenist theory;
- Public Administration including comparative public administration, human resources development, provincial and local administration, government reform, accountability, and performance measurement;
- Political Theory including contemporary and early modern political thought, feminist political thought, autobiography and the political philosophy of Jean-Jacques Rousseau and Simone de Beauvoir.

### Research Facilities

As a provincial capital, Winnipeg offers important advantages for undertaking research in politics. Key research libraries are housed at the University of Manitoba and the Manitoba Legislative Library, both official repositories for Canadian publications. The University of Manitoba Archives and Special Collections, and Provincial Archives provide a wealth of material on Manitoba, Prairie and Canadian politics. Additionally, the university's data library and the Inter-University Consortium for Political and Social Research provide access to electronic data sources, including Statistics Canada and census data, as well as public opinion and election surveys. The University of Manitoba is also a member of the Shastri Indo-Canadian Institute which enhances the Library collection on India and supports graduate research. Finally, the Centre for Defence and Security Studies supports an extensive library of



journals, periodicals, and texts in the fields of international relations, security studies, and foreign policy.

[Manitoba Institute for Policy Research](#) (MIPR):

The MIPR was established in 2010, and is supported by the Province of Manitoba and the University of Manitoba. The MIPR was created to pursue collaborative and interdisciplinary research in the areas of public policy, administration, and governance and to engage academics, government, the private and non-profit sectors, and citizens of Manitoba on a wide variety of policy issues concerning Manitoba, Western Canada, and Canada in general. Part of its mandate is to develop education programs, advisory committees, seminars, conferences, and workshops, and will work towards a new post-graduate professional development certificate in public service.

### **M.A. in Political Studies, Admission**

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, admission to the [Master's program in Political Studies](#) is through successful completion of the pre-M.A. year, as outlined below, or by completion of a B.A.(Honours) program in Political Studies. Applicants possessing a B.A.(Honours) are expected to have maintained a grade point average of 3.5 (B+) in their last 36 credit hours in Political Studies courses, to have completed a course in Political Theory, and to have maintained a cumulative grade point average of 3.0 (B). Students who have a B.A.(Adv.) with a course selection pattern and performance comparable in quality to that of a B.A.(Hons.) student will also be considered. Applicants possessing a B.A. (Honours) in another discipline with a cumulative grade point average of 3.5 (B+) will be considered for direct entry into the program, primarily on the basis of their completion of Political Studies or directly related courses.

The pre-Master's year is designed for students who do not meet the requirements for admission to the Master's program. To be eligible for pre-Master's study, applicants will normally possess a general Bachelor's degree with a major in Political Studies (30 credit hours including one course in Political Theory), with a minimum cumulative grade point average of 3.0 (B). Applicants possessing a general B.A. in another discipline with a cumulative grade point average of 3.5 (B+) will also be considered for direct entry into the pre-Master's program, primarily on the basis of their completion of Political Studies or directly related courses.

Admission to the pre-Master's year does not guarantee future admission to a MA program in Political Studies; students in the pre-Master's program are required to follow the normal application procedures for entry into the Master's program.

### **Application Deadline**

Department deadline for applications for Regular Session (September) for International students is January 15 and for Canadian/U.S. students June 1.

### **Program Requirements**

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, students in the Master's program must complete either: 12 credit hours of 7000-level courses in Political Studies and a thesis requiring some original research in primary sources; or 24 credit hours of 7000-level courses, a research paper demonstrating familiarity with secondary sources, two written comprehensive exams, and an oral examination. All students must maintain an overall average of "B-" with no grade below a "B" in their coursework to remain in the program.

A student in the pre-Master's year will normally be required to successfully complete 24 credit hours at the 4000 level in Political Studies. Under special circumstances, the substitution of 6 credit hours at the 4000 level in an ancillary subject or at the 3000 level in Political Studies may be allowed. Decisions regarding the substitution of courses for the fulfilment of the program requirements rest with the Department's Graduate Committee and must be obtained in writing.

Students in the pre-Master's year must achieve a cumulative grade point average of 3.5 (B+) with no grade lower than a B (3.0 grade points) in course work to be eligible for admission into the Master's program.

More information may be found in the Supplementary Regulations pertaining to the Master of Arts and pre-Master's Programs in Political Studies.

Second Language Reading Requirement: No

Expected Time to Graduate: Two years

### **Ph.D. in Political Studies,**

The Department of Political Studies does not offer a Ph.D. Program.

### **Political Studies -6000 Level**

**POLS 6010** The Manitoba Legislative Internship Seminar Cr.Hrs.6

(Formerly 019.601) This credit is granted to six individuals who annually complete the assignment as Legislative Interns within the Manitoba Legislative Assembly.

**POLS 6500** Co-operative Education Work 1 Cr.Hrs.3

(Formerly 019.650) This credit is granted to full time registered students in the Master of Public Administration who have registered in the co-op option of the program. Eligible candidates must have attended two mandatory workshops and completed a minimum 24 credit hours of



course work prior to the first work term placement. Work terms are paid positions by employers primarily in the public sector. Work terms are a minimum of 13 weeks.

**POLS 6510** Co-operative Education Work 2 Cr.Hrs.3 (Formerly 019.651) This credit is granted to full time registered students in the Master of Public Administration who have registered in the co-op option of the program. Eligible candidates must maintain full time status and have attended two mandatory workshops, completed a minimum 24 to a maximum of 48 credit hours of course work, and successfully completed a first work term prior to the second work term placement. Work terms are paid positions by employers primarily in the public sector. Work terms are a minimum of 13 weeks.

### Political Studies -7000 Level

**POLS 7280** Directed Readings in Politics Cr.Hrs.3 (Formerly 019.728) An independent reading and/or research course on a selected topic in political studies, undertaken and arranged in consultation with the prospective instructor, upon the approval of the Graduate Committee. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 7290** Directed Readings in Politics 2 Cr.Hrs.6 (Formerly 019.729) An independent reading and/or research course on a selected topic undertaken and arranged in consultation with the prospective instructor, upon approval of the Graduate Committee. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 7300** Directed Readings in Public Administration Cr.Hrs.3 (Formerly 019.730) An independent reading and/or research course on a selected topic undertaken and arranged in consultation with the prospective instructor, upon approval of the Graduate Committee. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 7330** State-Civil Society Relations Cr.Hrs.3 An examination of how the state relates to civil society actors, notably the voluntary sector in Canada. Students will critically assess the role voluntary organizations play - and should play - in governing process.

**POLS 7340** Canadian Government Cr.Hrs.3 (Formerly 019.734) Examines the core institutions of Canadian Government and politics including parliamentary government, federalism, the Constitution and the Charter of Rights and Freedoms. Students may not hold credit for both POLS 7340 (or 019.734) and the former 019.776.

**POLS 7350** Canadian Democracy Cr.Hrs.3 (Formerly 019.735) Examines the core institutions and processes of Canadian democracy including political parties, elections, voting, social movements, interest groups and public opinion. Students may not hold credit for both POLS 7350 (or 019.735) and the former 019.776.

**POLS 7370** Seminar in the Theory and Practice of Public Administration Cr.Hrs.6 (Formerly 019.737) The intent of this course is to provide

insight into the exigencies of actual public administration. The course will be conducted on a topical basis within the framework of certain trends facing Canadian governments today. (The course will attempt to utilize, to the fullest extent possible, the particular expertise of students in the program, faculty members, and of both elected and appointed public officials.) Students may not hold credit for both POLS 7370 (or 019.737) and the former 019.731.

**POLS 7410** Selected Topics in Political Behaviour 1 Cr.Hrs.3 (Formerly 019.741) A systematic examination of empirical research in the area of political socialization and political culture. Students may not hold credit for both POLS 7410 (or 019.741) and the former 019.725.

**POLS 7470** Strategic Human Resource Management in Government Cr.Hrs.3 A study of the human resource management functions, including planning, staffing, training, performance management, compensation and labour relations, in ways that optimize organizational performance. This course will also address contemporary challenges including recruitment and retention, managing change, demographic shifts, and information technology.

**POLS 7520** The Political Classics Cr.Hrs.3 (Formerly 019.752) A thorough study of selected works with special attention to methodology, historical content, theoretical position and universal significance. Students may not hold credit for both POLS 7520 (or 019.752) and the former 019.771.

**POLS 7530** International Political Economy Cr.Hrs.3 (Formerly 019.753) An examination of the systematic study of international political economy. Particular attention is paid to the foreign economic policies of advanced industrialized states and the various issues surrounding the redistribution of wealth and influence in the contemporary international system.

**POLS 7550** Contemporary Issues in Canadian Politics Cr.Hrs.3 (Formerly 019.755) A seminar series examining a contemporary debate in Canadian politics and government. The specific topic will vary from year to year depending on faculty interest and specialization.

**POLS 7610** Political Theory and Contemporary Issues Cr.Hrs.3 (Formerly 019.761) An examination of recent theoretical perspectives on contemporary political institutions, problems and values. Students may not hold credit for both POLS 7610 (or 019.761) and the former 019.771.

**POLS 7710** Liberalism and Its Critics Cr.Hrs.3 An advanced study of liberalism and various theoretical challenges to its ethical and political claims.

**POLS 7720** Comparative Government Cr.Hrs.6 (Formerly 019.772) Three hours a week, both terms. The primary focus of this course will be on the major Western "democracies" (e.g., United Kingdom, United States, and Western Europe). Phenomena to be examined include political participation and the problems of social change in industrial societies.



**POLS 7790** International Relations Theory Cr.Hrs.3  
(Formerly 019.779) A critical assessment of basic theories and models used in International Relations, emphasizing theoretical approaches and research. Students may not hold credit for both POLS 7790 (or 019.779) and the former 019.773.

**POLS 7850** Contemporary Strategic and Security Studies Cr.Hrs.6  
(Formerly 019.785) An advanced course in strategic studies. The evolution of strategic thought in the modern period will be examined, and particular emphasis will be placed on the role of armed force in relation to the problem of international security. Students may not hold credit for both POLS 7850 (or 019.785) and the former 019.783. Normally students will be expected to have taken POLS 4730 (or 019.473) or its equivalent as prerequisite.

**POLS 7910** Multivariate Research Methods Cr.Hrs.3  
(Formerly 019.791) Introduction to the theory and application of multivariate regression models in political analysis. Students may not hold credit for POLS 7910 (or 019.791) and either the former 019.732 or 019.788.

### Political Studies -9000 Level

**POLS 9010** UW POL 4301 Administrative Theory Cr.Hrs.6  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9020** UW POL 4400 Seminar in Canadian Politics Cr.Hrs.6  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9030** UW POL 4415 State and Economy Cr.Hrs.6  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9090** UW POL 7331 Directed Readings in Public Administration Cr.Hrs.6  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9120** UW POL 4220 Liberty and Community in Modern Canadian Political Thought Cr.Hrs.6  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9230** UW POL 4410 Seminar in Women in Politics Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9240** UW 4505 Politics of Urban Planning Cr.Hrs.6  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9340** UW POL 7300 Seminar in Theory and Practice of Public Administration I Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9350** UW POL 7305 Seminar in Theory and Practice of Public Administration II Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9370** UW POL 7320 Seminar in the Public Policy Process Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9380** UW POL 7325 Seminar in Public Policy Issues Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9390** UW POL 4200 Feminist Political Thought Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9460** UW POL 7505 Politics of Urban Planning Cr.Hrs.6  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9470** UW POL 7335 Directed Readings in Public Administration Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9480** UW POL 4305 Administrative Law Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9490** UW POL 4600 Directed Readings Cr.Hrs.6  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9500** UW POL 4605 Directed Readings Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9540** UW POL 4515 Inner City Seminar Cr.Hrs.6  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9550** UW POL 4320 Strategic Planning in Organizations II Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of



Winnipeg.

**POLS 9570** UW POL 4100 Seminar in Global Politics Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9602** UW POL 7380 Special Topics Seminar in Public Administration Cr.Hrs.6  
University of Winnipeg Course: Special Topics Seminar in Public Administration.

**POLS 9604** UW POL 4385 Special Topics in Public Administration Cr.Hrs.3  
University of Winnipeg Course: Special Topics in Public Administration.

**POLS 9606** UW POL 7385 Special Topics in Public Administration Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9608** UW POL 4121 Special Topics in Global Politics Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

## Preventive Dental Science

Orthodontics

**Head:** (and Graduate Chair) W.A. Wiltshire

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**Website:** <http://umanitoba.ca/dentistry>

**Academic Staff:** Please refer to our website for Academic staff information: <http://umanitoba.ca/dentistry>

The department offers a 3-year (minimum 36 months) Master's program in orthodontics, fully accredited by the Commission on Dental Accreditation of Canada. This program provides eligibility to sit the examination of the Royal College of Dentists of Canada (RCDC) and the American Board Exams in Orthodontics (ABO). The program is intended to provide a background in the basic sciences underlying orthodontic treatment and develop a critical, independent, problem-solving approach toward clinical practice.

Graduate orthodontic students have the opportunity to treat approximately 65 new patient starts and a similar number of transfer and retention patients using a wide variety of orthodontic techniques. The strength of the clinical program is a wide range of diversity in instructor philosophies of treatment and the opportunity to learn several techniques

such as full fixed modified edgewise type mechanics, sectional arch mechanics, early treatment philosophies and functional orthopaedics. In addition, a variety of surgical and cleft palate combination orthodontic surgical cases.

Graduate students also are expected to do some limited teaching in the undergraduate orthodontic clinic, present their research at an international congress, submit an article for peer-reviewed publication based on their research and orally defend their research project.

Graduates of the program over the past years have gone on to establish successful practices world-wide in such countries as Canada, U.S.A., Australia, Ireland, Columbia, Taiwan, Finland and the United Arab Emirates, amongst others.

### Fields of Research

The current foci of research are in orthodontic biomaterials, adhesivity, anticariogenicity, allergenicity, fluoride release, epidemiology of malocclusion, public health orthodontics, preventive and interceptive orthodontics, clinical research in temporomandibular joint dysfunction, and the biology of tooth movement.

### Research Facilities

The graduate orthodontic program offers a state-of-the-art 14 chair clinic with modern computerized diagnostic equipment and an on-site dedicated orthodontic technician. The latest addition to the research facilities is a state-of-the-art Zwick materials testing machine, in addition to the general research laboratories of the Faculty of Dentistry.

### M.Sc. in Orthodontics Speciality, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

### Application deadline

All application materials should be submitted to the Faculty of Graduate Studies by September 1.

### Program Requirements

Minimum Program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this calendar. Students must successfully complete all courses offered by the department as well as ANAT 7060, CHSC 7470, RSTD 7150, DDSS 7230. A thesis based on original research and acceptable to the Faculty of Graduate Studies and successful oral defence is also required, as well as submission of a peer-reviewed paper suitable for publication to the satisfaction of the program director.



### Clinical Requirements

Students are required to treat approximately 65 new cases, a number of active transfer cases, plus approximately 80 retention cases including cleft palate and combined orthodontic-surgical patients to the satisfaction of the clinical faculty and an external examiner. The minimum full-time requirement to complete the total program is 35 months.

Second Language Reading Requirement: None

Expected Time to Graduate: minimum 36 months

### Ph.D. in Preventive Dentistry,

There is no Ph.D. Program offered in the Department of Preventive Dentistry.

### Preventive Dental Science -PDSD 7000 Level

**PDSD 7000** Neural Basis of Oropharyngeal Function Cr.Hrs.3

(Formerly 101.700) A program of problem-oriented seminars on the sensory and reflex mechanisms affecting the respiratory and alimentary functions of the mouth and pharynx, mandibular posture and movement and respective application to oropharyngeal dysfunction and orthodontic therapy. One seminar per week for one term.

**PDSD 7020** The Mechanics of Orthodontic Therapy Cr.Hrs.6

(Formerly 101.702) The mathematics of three dimensional space, force and moment systems are given as the basis for considering the mechanics of orthodontic treatment. The mechanical properties of some orthodontic materials are studied as a background for appliance design. The quantitative aspects of tooth movement are discussed in terms of patient treatment planning. Seminar and laboratory sessions.

**PDSD 7030** Biological Basis of Craniofacial Growth and Development Cr.Hrs.3

(Formerly 101.703) A program of student-based seminars on the biophysical, biochemical and histological basis of growth and development of craniofacial structures.

**PDSD 7040** Clinical Craniofacial Growth and Development Cr.Hrs.3

(Formerly 101.704) A program of student-based seminars on the morphogenesis of craniofacial structures and their significance to clinical problems.

**PDSD 7060** Cephalometric Analysis Cr.Hrs.3

(Formerly 101.706) A seminar program on the application of cephalometric radiography to craniofacial morphological research, orthodontic diagnosis and case analysis.

**PDSD 7070** Biology of Orthodontics and Facial Orthopedics Cr.Hrs.3

(Formerly 101.707) A program of student-based seminars and lectures on the biological basis of orthodontic and facial

orthopedic diagnosis and therapeutic technique.

**PDSD 7101** Preventive Programs in Pediatric Dentistry Cr.Hrs.3

This course will be offered during the second year (term III). The prerequisite for this course will be the completion of the required courses in the first year of the program. In clinical terms this course will be taught with the following courses: Management and Restorative Treatment of Pediatric Patients II. Course is evaluated on a pass/fail basis.

**PDSD 7102** Hospital Pediatric Dentistry I Cr.Hrs.6

This course will be offered during the first year (term I and II). The prerequisite for this course will be the dental degree obtained prior to applying to the program. In clinical terms this course will be taught with the following courses: Management and Restorative Treatment of Pediatric Patients I and Special Needs and Emergency care in Pediatric Patients. Course is evaluated on a pass/fail basis.

**PDSD 7103** Hospital Pediatric Dentistry II Cr.Hrs.6

This course will be offered during the first year (term III and IV). The prerequisite for this course will be completion of the required courses in the first year of the program. In clinical terms this course will be taught with the following courses: Management and Restorative Treatment of Pediatric Patients II and Preventive Programs in Pediatric Dentistry. Course is evaluated on a pass/fail basis.

**PDSD 7104** Management and Restorative Treatment of Pediatric Patients I Cr.Hrs.6

This course will be offered during the first year (term I and II). The prerequisite for this course will be the dental degree obtained prior to applying to the program. In clinical terms this course will be taught with the following courses: Hospital Pediatric Dentistry I and Preventive and Community Pediatric Dentistry. Course is evaluated on a pass/fail basis.

**PDSD 7105** Management and Restorative Treatment of Pediatric Patients II Cr.Hrs.6

This course will be offered during the second year (term III and IV). The prerequisite for this course will be the completion of the required courses in the first year of the program. In clinical terms this course will be taught with the following courses: Hospital Pediatric Dentistry II and Preventive Programs in Pediatric Dentistry. Course is evaluated on a pass/fail basis.

**PDSD 7106** Preventive and Community Pediatric Dentistry Cr.Hrs.3

This course will be offered during the first year (term I). The prerequisite for this course will be the dental degree obtained prior to applying to the program. In clinical terms this course will be taught with the following courses: Management and Restorative Treatment of Pediatric Patients I. Course is evaluated on a pass/fail basis.

**PDSD 7107** Special Needs and Emergency Care in Pediatric Patients Cr.Hrs.3

This course will be offered during the first year (term I). The prerequisite for this course will be the dental degree obtained prior to applying to the program. In clinical terms this course will be taught with the following courses: Management and Restorative Treatment of Pediatric Patients I and Hospital Pediatric Dentistry I. Course is evaluated on a pass/fail basis.



## Preventive Dental Science -RSTD 7000

### Level

#### RSTD 7100 Dental Materials Cr.Hrs.6

(Formerly 102.710) This course consists of lecture, seminar and laboratory periods. The student will examine the current literature relevant to the program and will gain experience in the testing procedures used to evaluate dental materials. A project involving the evaluation of a dental material will be required of each student.

#### RSTD 7150 Orthodontic Materials Cr.Hrs.3

(Formerly 102.715) Students will examine in depth through lectures, seminars and research of the current literature, those materials used by orthodontists in their clinical practice. The relationship between materials properties and clinical performance will be emphasized.

## Psychology

**Head:** T. A. Mondor

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**Website:** <http://umanitoba.ca/psychology>

**Academic Staff:** Please refer to our website for Academic staff information: <http://umanitoba.ca/psychology>

Graduate study in the Department of Psychology is offered at both the M.A. and the Ph.D. levels. The primary purpose of the program is to provide training in several specialized areas of psychology for individuals desiring to advance their level of knowledge, their research skills, and their applied capabilities. The M.A. program is designed to provide a broad foundation in the scientific approach to psychology, as well as specialized skills. The Ph.D. program provides a higher degree of specialization coupled with more intensive training in research and application. With their advanced training graduates make careers in a variety of work settings such as self-employment, universities and colleges, government, private for-profit companies, schools, and private not-for-profit organizations.

An on-line brochure entitled Graduate Study in Psychology, which details staff interests, the areas in which students may study, and the offerings and requirements in each area, is available at: <http://umanitoba.ca/psychology>

### Fields of Research

Research areas include: Applied Behaviour Analysis, Brain and Cognitive Sciences, Clinical, Developmental, Methodology, School, Social and Personality.

### Research Facilities

The department has a variety of research facilities in virtually all areas of psychology. These facilities are housed in over

100 different research rooms that include: A microcomputer laboratory and local area network; a biofeedback laboratory; operating and histological rooms and equipment; animal laboratories for research with ducks, rats, pigeons, fish, rabbits, mice, and parakeets; one way vision rooms for small group research; closed circuit television systems; a laboratory for studying college teaching; vision laboratories; the Avian Behaviour Laboratory, a field station/laboratory complex to study the behaviour of mallard ducks and Canada geese; the Psychological Services Centre, a training clinic for clinical psychology graduate students, social work students, and psychiatric residents; specialized electronics shop.

### M.A. in Psychology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Additional requirements are detailed in the brochure entitled Graduate Study in Psychology, which is available on-line at <http://umanitoba.ca/psychology>

### Application Deadline

All applicants should send their applications with complete supporting documentation to the Faculty of Graduate Studies, no later than December 15.

The normal requirement for admission is an Honours B.A. or B.Sc. in Psychology or its equivalent. Students seeking admission with other degrees will usually be required to complete a pre-Master's year to the satisfaction of the department.

### Program Requirements

The basic requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Additional requirements are detailed in the brochure entitled Graduate Study in Psychology, which is available on-line at <http://umanitoba.ca/psychology>

Second Language Reading Requirement: Not required

Expected Time to Graduate: Two years

### Ph.D. in Psychology, Admission

Students may be admitted to the doctoral program if they have the equivalent of an M.A. degree in Psychology from the University of Manitoba. Additional requirements are detailed in the brochure entitled Graduate Study in Psychology, which is available on-line at <http://umanitoba.ca/arts/psychology>

### Application Deadline



All applicants should send their application with complete supporting documentation to the Faculty of Graduate Studies no later than December 15.

### Program Requirements

The basic requirements are those of the Faculty of Graduate Studies. Additional requirements are detailed in the brochure entitled Graduate Study in Psychology. Students in the clinical training program have a more extensive program of study, including clinical practice at the Psychological Service Centre, and must complete an internship year at an accredited training site. A formal candidacy exam is set by the advisory committee. Following successful completion of the candidacy examinations, the student completes a Ph.D. thesis.

Second language requirement: Not required

Expected time to graduation: Non-Clinical Programs, three years; Clinical Program, four years.

### M.A. in School Psychology, Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Additional requirements are detailed in the brochure entitled Graduate Study in Psychology, which is available on-line at <http://umanitoba.ca/psychology>

### Application Deadline

All applicants should send their applications with complete supporting documentation to the Faculty of Graduate Studies no later than December 15.

The normal requirement for admission is an Honours B.A. or B.Sc. in Psychology or its equivalent. Students seeking admission with other degrees will usually be required to complete a pre-Master's year to the satisfaction of the department.

### Program Requirements

The basic requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Additional requirements are detailed in the brochure entitled Graduate Study in Psychology, which is available on-line at <http://umanitoba.ca/psychology>

Second Language Reading Requirement: Not required

Expected Time to Graduate: Two years or Three years (Thesis stream)

### Psychology -7000 Level

**PSYC 7012** Ethics, History and Profession of School Psychology 1 Cr.Hrs.3

An overview of the fundamental concepts and issues of professional School Psychology. Ethical, professional, regulatory and legal issues pertaining to the practice of school psychology are examined. Also examined are the history of school psychology and the organization of educational systems. Students may not hold credit for both PSYC 7012 and the former PSYC 7010 (017.701). Prerequisite: permission of instructor.

**PSYC 7014** Ethics, History and Profession of School Psychology 2 Cr.Hrs.3

A continuation of the examination of fundamental concepts and issues of professional School Psychology. Ethical, professional, regulatory and legal issues pertaining to the practice of school psychology are examined. Also examined are the history of school psychology and the organization of educational systems. Students may not hold credit for both PSYC 7014 and the former PSYC 7010 (017.701). Prerequisite: permission of instructor.

**PSYC 7022** Psycho-educational Assessment and Measurement 1 Cr.Hrs.3

Designed to provide students with training in the basic principles of psychological assessment and related measurement concepts, highlighting the process of data-based decision making. Emphasis will be placed on how information from a variety of psycho-educational sources is used to identify profiles for planning intervention programs. Students may not hold credit for both PSYC 7022 and the former PSYC 7020 (017.702). Prerequisite: permission of instructor.

**PSYC 7024** Psycho-educational Assessment and Measurement 2 Cr.Hrs.3

A continuation of training in the basic principles of psychological assessment and related measurement concepts, highlighting the process of data-based decision making. Emphasis will be placed on how information from a variety of psycho-educational sources is used to identify profiles for planning intervention programs. Students may not hold credit for both PSYC 7024 and the former PSYC 7020 (017.702). Prerequisite: permission of instructor.

**PSYC 7030** Learning and Cognitive Impairment Cr.Hrs.3

(Formerly 017.703) An examination of cognitive and medical disorders that have a direct impact on learning, including disabilities, reading failure, mental retardation, Attention Deficit Hyperactivity Disorder, pervasive development disorders (e.g. autism), fetal alcohol syndrome, and co-occurring conditions. Effective compensatory interventions and social, behavioural and affective consequences will be emphasized.

**PSYC 7040** Teaching Strategies, Learning Styles, and Academic Remediation Cr.Hrs.3

(Formerly 017.704) Provides an overview of basic theories of learning as applied to effective classroom instruction. Knowledge of individual differences in learning and principles of best practices in classroom instruction will be applied to the development of effective and curriculum adaptations for students with specific academic problems.

**PSYC 7050** Junior Practicum in School

Psychology Cr.Hrs.3

(Formerly 017.705) Supervised practice with school children in a field setting. Emphasis on development of skills in assessing intelligence, academic skills and social-emotional difficulties, and on communication of findings to parents, teachers, and school administrators through written and verbal reports. Pass/Fail course. Prerequisite: permission of instructor.

**PSYC 7060** Senior Practicum in School Psychology Cr.Hrs.6

(Formerly 017.706) Supervised practice in a school setting. The focus is on development of skills relevant to case conceptualization, intervention, and supervision of junior practicum students. Pass/Fail course. Prerequisites: PSYC 7050 (or 017.705), permission of instructor.

**PSYC 7070** Social, Emotional, and Personality Assessment of Children/Youth Cr.Hrs.3

(Formerly 017.707) An overview of theory, research, and the educational implications of social, emotional, and personality assessment of children and adolescents. A variety of methods are examined with an emphasis on empirically-supported practices in the assessment of psychopathology and socio-emotional functions. Prerequisite: permission of instructor.

**PSYC 7080** Child/Youth Psychopathology Cr.Hrs.3

(Formerly 017.708) Examines mental health conditions, covering a range of internalizing and externalizing disorders in children and youth. Biopsychosocial and ecological models, risk and resiliency, and developmental and cultural issues are examined. Structured and semi-structured diagnostic interviews are reviewed.

**PSYC 7090** Behavioural Assessment and Intervention in School Settings Cr.Hrs.3

(Formerly 017.709) Behavioural management strategies and techniques for children and adolescents who present with serious disruptive and/or emotional and behavioural disorders in schools. A wide range of techniques and strategies are considered. Prerequisite: permission of instructor.

**PSYC 7120** Consultation and Supervision Cr.Hrs.3

(Formerly 017.712) An examination of theories and models of school-based consultation and collaboration. Practice with techniques and procedures associated with effective consultation with teachers, school administrators, and parents. Prerequisite: permission of instructor.

**PSYC 7130** School Psychology Research Design and Program Evaluation Cr.Hrs.3

(Formerly 017.713) Provides students with knowledge and skills needed to understand, design, and conduct evaluations of intervention programs for individuals experiencing academic or behaviour difficulties in school. Addresses the aims, theories and methods of program evaluation, including relevant research design and statistical methods. Prerequisite: permission of instructor.

**PSYC 7140** Clinical Research Design Cr.Hrs.3

This course addresses issues of research design relevant to clinical research. Topics include reliability and validity of measurement, correlational, quasi-experimental, and experimental designs, clinical significance, and power analysis. Students complete a research proposal relevant to

their thesis interests.

**PSYC 7150** Readings in Autism Spectrum

Disorders Cr.Hrs.3

Students will read recent research in Autism Spectrum Disorders, acquire skills to critically evaluate empirical evidence, and examine implications for practice. Among the topics covered will be assessment, diagnosis, epidemiology, and applied behaviour analysis early intervention. Prerequisite: permission of instructor.

**PSYC 7160** Cross-Cultural Social Psychology Cr.Hrs.3

Cross-cultural psychology is the critical and comparative study of the linkages between cultural norms and thoughts, feeling and behaviour. This course focuses on Cross-cultural Social Psychology. Therefore, the assigned readings deal with topics that Social Psychology in general examines.

**PSYC 7170** Theories of Close Relationships Cr.Hrs.3

Students will be exposed to the theories that apply to the initiation, development, maintenance, and dissolution of relationships. The primary focus will be on evolutionary theory, attachment styles, communal and exchange relationships, equity theory, interdependence theory and the investment model, attributional theories, and theories of love.

**PSYC 7180** Self-Regulation and Health Cr.Hrs.3

This course examines how self-regulatory processes such as goal-setting and self-awareness can affect behaviours that promote or undermine human health. A wide range of health-related behaviours is considered such as smoking, exercise, safe-sex practices, and eating.

**PSYC 7190** Social Psychology and Health Cr.Hrs.3

This course considers health from a social psychological perspective. Weekly readings and discussion will focus on social cognitive processes and social influence processes that may mediate between stress and illness or may direct people's judgments of their health and choices of health-related behaviours.

**PSYC 7192** Psychology of Health and Aging Cr.Hrs.3

This course considers how adults adapt to the challenges of aging and the accompanying health problems. Seminar discussions will focus on selected psychological theories and related empirical literature regarding belief systems that operate in the face of health- and age-related challenges. Students may not hold credit for both PSYC 7192 and PSYC 7310 (017.731) with the topic "Health and Aging."

**PSYC 7200** Quantitative Methods in Psychology 1 Cr.Hrs.3

An introduction to descriptive and inferential statistics as it relates to the analysis of psychological data. Topics such as shapes of distributions, measures of central tendency and variability, hypothesis testing, and interval estimation, single and multifactor analyses, classical and robust methods of analysis will be discussed.

**PSYC 7210** Quantitative Methods in Psychology 2 Cr.Hrs.3

Applied statistics for psychologists, with a focus on regression analysis, linear models, and generalized linear models. Emphasis will be placed on the application of statistical methods and computer software in psychological research. Not to be held with the former PSYC 8420 (017.842). Prerequisite: PSYC 7200 or permission of instructor.

**PSYC 7220** Autism Practicum 1 Cr.Hrs.3

Graduate students will be taught to provide applied behavior analysis training for children with autism. Students will be taught many of the skills expected of tutors and senior tutors in the St. Amant Applied Behavior Analysis Program for Children with Autism. Prerequisite: permission of instructor.

**PSYC 7230** Autism Practicum 2 Cr.Hrs.3

Graduate students will learn to supervise tutors and parents providing applied behavior analysis training for children with autism. Students will be taught many of the skills expected of a clinical consultant in the St. Amant Applied Behavior Analysis Program for Children with Autism. Prerequisite: PSYC 7220 and permission of instructor.

**PSYC 7240** Developmental Disabilities Practicum 1 Cr.Hrs.3

Students will work closely with behavior analysts in the Psychology Department at St. Amant to assess problems, design and execute appropriate interventions, and conduct follow-ups for persons with developmental disabilities. Prerequisite: permission of instructor.

**PSYC 7250** Developmental Disabilities Practicum 2 Cr.Hrs.3

Graduate students will work closely with behavior analysts in the Psychology Department at St. Amant in the provision of applied behavior analysis consultation services for front line staff caring for persons with developmental disabilities. Prerequisite: PSYC 7240 and permission of instructor.

**PSYC 7260** Case Conceptualization and Communication 1 Cr.Hrs.0

In this course students will be exposed to the theory and practice of case conceptualization and communication. Students are required to be present for presentations of clinical cases and participate in discussions of them. Grading is Pass/Fail. Prerequisite: permission of instructor.

**PSYC 7270** Case Conceptualization and Communication 2 Cr.Hrs.0

In this course students will be exposed to the theory and practice of case conceptualization and communication. Students are required to be present for presentations of clinical cases and participate in discussions of them. Grading is Pass/Fail. Prerequisite: permission of instructor.

**PSYC 7280** History and Systems of Psychology Cr.Hrs.3

A survey of the major contemporary systems of psychology and their history.

**PSYC 7290** Psychopathology and Diagnosis Cr.Hrs.3

Advanced study of abnormal behaviour, diagnostic approaches, and related research. Not to be held with the former PSYC 7870 (017.787). Prerequisite: permission of instructor.

**PSYC 7300** Applied Behavior Analysis in Developmental Disabilities Cr.Hrs.3

Students will read recent applied behavior analytic research in behavioral assessments and interventions for people with developmental disabilities, acquire skills to critically evaluate empirical evidence, and examine implications for practice. Students may not hold credit for both PSYC 7300 and PSYC 7310 (017.731) with the topic "Research in Developmental Disabilities." Prerequisite: permission of instructor.

**PSYC 7310** Current Topics 1 Cr.Hrs.3

(Formerly 017.731) An intensive study of the contemporary research and theory in a selected field of psychology. As the course content will vary from year to year, students may take this course more than once for credit.

**PSYC 7320** Foundations of Evidence-Based Treatment Cr.Hrs.3

This course is designed to provide students with both a knowledge/evidence base for the foundations of psychotherapy and practical skills that will prepare them for more advanced learning via supervised work with clients. Not to be held with the former PSYC 8410 (017.841). Prerequisite: permission of instructor.

**PSYC 7330** Cognitive Development Cr.Hrs.3

You will gain an advanced understanding of core theories and fundamental issues in cognitive development research. You will also gain an in-depth understanding of a particular cognitive developmental research issue of your choice. Prerequisite: consent of instructor.

**PSYC 7340** Sensory Processes 1 Cr.Hrs.3

(Formerly 017.734) An intensive review of current research and theories in visual processes. Both behavioural and physiological aspects of vision will be considered.

**PSYC 7350** Sensory Processes 2 Cr.Hrs.3

(Formerly 017.735) An intensive review of current theories and research in audition, smell, taste, and the cutaneous senses.

**PSYC 7360** Perception Cr.Hrs.3

(Formerly 017.736) A survey of theories of perception.

**PSYC 7370** Cognitive Processes Cr.Hrs.3

(Formerly 017.737) A study of thinking and related areas.

**PSYC 7380** Advanced Research Design Cr.Hrs.3

(Formerly 017.738) The use of randomized subjects, block, factorial, latin square, and repeated measures designs in psychological research is discussed. Ancillary topics considered are unbalanced designs, multiple linear regression, magnitude estimation and simultaneous inference. Students will also use statistical packages to analyze data from psychological experiments. Prerequisite: PSYC 8420 (or 017.842) or permission of instructor.

**PSYC 7390** Scaling Cr.Hrs.3

(Formerly 017.739) Methods and theory of scaling. Scaling models and issues in current psychophysical research. Prerequisite: PSYC 8420 (or 017.842) or permission of instructor.

**PSYC 7400** Measurement and Scaling Theory Cr.Hrs.3

(Formerly 017.740) Discussion of measurement theory, data theory, and scaling models. Prerequisite: PSYC 7390 (017.739) or permission of instructor.

**PSYC 7410** Advanced Psychometric Theory Cr.Hrs.3

(Formerly 017.741) Current theory and research in psychometrics. Prerequisite: PSYC 7400 (017.740) or permission of instructor.

**PSYC 7420** Multivariate Methods in Psychology Cr.Hrs.3

(Formerly 017.742) Designing and analyzing behavioural



science experiments containing multiple dependent (criterion) and independent (predictor) variables is discussed. The use of statistical packages is illustrated. Prerequisite: PSYC 8420 (or 017.842) or permission of instructor.

**PSYC 7430** Advanced Physiological Psychology Cr.Hrs.3 (Formerly 017.743) The physiological correlates of sensation, perception, learning, motivation, and complex behaviour.

**PSYC 7450** Psychology of Group Behaviour Cr.Hrs.3 (Formerly 017.745) An examination of the methodology, results, and interpretations of studies of the structural properties of groups, group formation, leadership, communication, problem-solving, and other group processes.

**PSYC 7460** Attitude Development and Change Cr.Hrs.3 (Formerly 017.746) A critical review of research involving attitude measurement, with emphasis on the experimental analysis of variables influencing the formation and modification of attitudes.

**PSYC 7470** Advanced Developmental Psychology Cr.Hrs.3 (Formerly 017.747) Theory and research in contemporary developmental psychology.

**PSYC 7492** Psychology of Addiction Cr.Hrs.3  
This course allows for advanced study in an integrative psychology of addictive disorders. Topics will include the history, epidemiology, psychopharmacology, and biological and psychosocial etiologies of addictive behaviours. Evidence-based treatments will also be covered.

**PSYC 7520** Ethics and Professional Issues in Clinical Psychology Cr.Hrs.3  
Study of professional issues in clinical psychology. Historical development and present status of clinical psychology; what defines a profession; ethics codes, standards of practice, and legal requirements; training, internships, and accreditation; professional organizations, registration, and advocacy; employment in public and private sectors. Grading is Pass/Fail. Not to be held with the former PSYC 8070 (017.807). Prerequisite: permission of instructor.

**PSYC 7530** Research in Psychopathology Cr.Hrs.3 (Formerly 017.753) A survey of the literature and a critical examination of methodological problems arising from studies of psychiatric milieu, psychotherapy, and the epidemiology of mental illness.

**PSYC 7540** Theories in Psychotherapy Cr.Hrs.3 (Formerly 017.754) An introduction to current approaches to psychotherapy and their underlying theories.

**PSYC 7550** Intellectual and Cognitive Assessment Cr.Hrs.3  
This course will provide clinical students with a thorough overview of key issues and clinical knowledge related to intellectual and cognitive assessment of children and adults. Learning will take place through a combination of lectures, course readings, discussion, group exercises, student presentations, and hands-on practical experience with cognitive tests. Not to be held with the former PSYC 8150 (017.815). This course is normally restricted to students in the clinical psychology program although non-clinical

students may enroll with permission of the instructor.

**PSYC 7560** Personality and Psychological Assessment Cr.Hrs.3

This course will provide clinical students with a thorough overview of key issues and clinical knowledge related to personality and psychological assessment of youth and adults. Learning will take place through a combination of lectures, course readings, discussions, group exercises, student presentations, and hands-on practical experience with personality and psychological tests. Not to be held with the former PSYC 8160 (017.816). This course is normally restricted to students in the clinical psychology program although non-clinical students may enroll with permission of the instructor.

**PSYC 7580** Advanced Motivation Cr.Hrs.3 (Formerly 017.758) Theory and methodology in contemporary studies of motivation.

**PSYC 7620** Person X Situation Interactionism Cr.Hrs.3  
We will first explore research demonstrating the impact of personality and situations, separately, on behavior. We will then examine the debate that arose about whether understanding the person or the situation would have the most scientific merit. We spend the remainder (and majority) of the course discussing the theories and research that arose from that debate. The majority of this research has an interactionist perspective, taking both the person and his/her situation into account. Students may not hold credit for both PSYC 7620 and PSYC 7310 (017.731) with the topic "Person X Situation Interactionism."

**PSYC 7630** Seminar in Social Psychology Cr.Hrs.3 (Formerly 017.763) An examination of current methods, research, and theory in selected topics in the area of experimental social psychology.

**PSYC 7640** Seminar in Social Psychology Cr.Hrs.3 (Formerly 017.764) An examination of current methods, research, and theory in selected topics in the area of experimental social psychology.

**PSYC 7650** Theory and Research in Personality Cr.Hrs.3 (Formerly 017.765) A lecture and reading course designed to familiarize the student with the concepts and operations associated with various approaches to the study of individual differences and patterns of difference in behaviour; emphasis is placed on research and that function of theory which generates research.

**PSYC 7670** Seminar in Personality 1 Cr.Hrs.3 (Formerly 017.767) An intensive examination of the current methods and research arising from the classical theories of personality.

**PSYC 7680** Seminar in Personality 2 Cr.Hrs.3 (Formerly 017.768) An examination of individual difference variables suggested by the various personality theories. Particular emphasis will be given to current research and theory.

**PSYC 7700** Problems in Psychological Research Cr.Hrs.3 (Formerly 017.770) No description available for this course.



**PSYC 7710** Problems in Psychological Research Cr.Hrs.3  
(Formerly 017.771) No description available for this course.

**PSYC 7720** Problems in Psychological Research Cr.Hrs.3  
(Formerly 017.772) No description available for this course.

**PSYC 7730** Problems in Psychological Research Cr.Hrs.3  
(Formerly 017.773) No description available for this course.

**PSYC 7740** Problems in Psychological Research Cr.Hrs.3  
(Formerly 017.774) No description available for this course.

**PSYC 7750** Problems in Psychological Research Cr.Hrs.3  
(Formerly 017.775) No description available for this course.

**PSYC 7760** Problems in Psychological Research Cr.Hrs.3  
(Formerly 017.776) No description available for this course.

**PSYC 7770** Problems in Psychological Research Cr.Hrs.3  
(Formerly 017.777) No description available for this course.

**PSYC 7780** M.A. Thesis Proposal Development Cr.Hrs.0  
Students registering for this course will work under the supervision of their advisor to prepare a complete draft of the M.A. Thesis Research Proposal. Students enrolled in a thesis-based M.A. program in Psychology must register for this course in one of their first four (4) terms of full-time study. The course must culminate in submission of a complete draft of the M.A. Thesis Research Proposal to all members of the thesis advisory committee. This course will be graded on a pass/fail basis as determined by majority opinion of the thesis advisory committee.

**PSYC 7790** Ph.D. Dissertation Proposal Development Cr.Hrs.0  
Students registering for this course will work under the supervision of their advisor to prepare a complete draft of the Ph.D. Dissertation Research Proposal. Ph.D. students must register for this course in one of their first eight (8) terms of full-time study. The course must culminate in submission of a complete draft of the Ph.D. Dissertation Research Proposal to all members of the thesis advisory committee. This course will be graded on a pass/fail basis as determined by majority opinion of the thesis advisory committee.

**PSYC 7800** Seminar in Quantitative Methods in Psychology 1 Cr.Hrs.3  
(Formerly 017.780) Special topics and recent advances in the design and analysis of behavioural science data will be discussed. Prerequisite: PSYC 7760 (or 017.776) or permission of instructor.

**PSYC 7810** Seminar in Quantitative Methods in Psychology 2 Cr.Hrs.3  
(Formerly 017.781) An extension of the material covered in PSYC 7800 (or 017.780) with particular emphasis on quantitative techniques typically employed in such areas as discrimination learning, personality, etc. Prerequisite: PSYC 7760 (or 017.776) or permission of instructor.

**PSYC 7820** Interventions I Cr.Hrs.3  
This course examines empirically-supported interventions ranging from primary through tertiary prevention/intervention efforts directed at individuals, groups, and families, as well as classroom- and school-based intervention and prevention programs to promote a range of adaptive outcomes and

intervene in a range of maladaptive pathways.

**PSYC 7830** Interventions II Cr.Hrs.3  
This course examines empirically-supported interventions ranging from primary through tertiary prevention/intervention efforts directed at individuals, groups, and families, as well as classroom- and school-based intervention and prevention programs to promote a range of adaptive outcomes (e.g., social competence, positive peer relations) and intervene in a range of maladaptive pathways (e.g., development of internalizing and externalizing problems and disorders). The course briefly introduces some specific programs available to assist in intervention design; however, the focus is on broad theoretical principles and aspects of evidence-based perspectives. Opportunities to integrate assessment and intervention will be presented throughout the course.

**PSYC 7880** Seminar in Clinical Problems Cr.Hrs.3  
(Formerly 017.788) Discussion and consideration of current problems associated with clinical service, teaching, research, and administration. Prerequisite: PSYC 7540 (or 017.754).

**PSYC 7890** Seminar in Clinical Problems Cr.Hrs.3  
(Formerly 017.789) Discussion and consideration of current problems associated with clinical service, teaching, research, and administration. Prerequisite: PSYC 7540 (or 017.754).

**PSYC 7900** Foundations of Health Psychology Cr.Hrs.3  
For advanced students in psychology seeking specialized expertise in health, this course will review major topics such as the human body, the mind/brain connection, research methods, psychology and health care, terminal illness, pain and chronic disease, stress/coping, and health-related behaviours.

**PSYC 7910** Clerkship-Practicum in Clinical Psychology Cr.Hrs.0  
(Formerly 017.791) Supervised practice in a clinical service facility operated by the university or approved by the clinical training program. Direct client contact to provide experience in assessment and therapy, based on case conceptualization and supervision by clinical faculty. Enrollment normally restricted to students in Clinical Psychology. Pass/Fail course. Prerequisite: consent of instructor.

**PSYC 7920** Clerkship-Practicum in Clinical Psychology Cr.Hrs.0  
(Formerly 017.792) Supervised practice in a clinical service facility operated by the university or approved by the clinical training program. Direct client contact to provide experience in assessment and therapy, based on case conceptualization and supervision by clinical faculty. Enrollment normally restricted to students in Clinical Psychology. Pass/Fail course. Prerequisite: consent of instructor.

**PSYC 7930** Clerkship-Practicum in Clinical Psychology Cr.Hrs.0  
(Formerly 017.793) Supervised practice in a clinical service facility operated by the university or approved by the clinical training program. Direct client contact to provide experience in assessment and therapy, based on case conceptualization and supervision by clinical faculty. Enrollment normally restricted to students in Clinical



Psychology. Pass/Fail course. Prerequisite: consent of instructor.

**PSYC 7940** Clerkship-Practicum in Clinical Psychology Cr.Hrs.0 (Formerly 017.794) Supervised practice in a clinical service facility operated by the university or approved by the clinical training program. Direct client contact to provide experience in assessment and therapy, based on case conceptualization and supervision by clinical faculty. Enrollment normally restricted to students in Clinical Psychology. Pass/Fail course. Prerequisite: consent of instructor.

**PSYC 7950** Clerkship-Practicum in Clinical Psychology Cr.Hrs.0 (Formerly 017.795) Supervised practice in a clinical service facility operated by the university or approved by the clinical training program. Direct client contact to provide experience in assessment and therapy, based on case conceptualization and supervision by clinical faculty. Enrollment normally restricted to students in Clinical Psychology. Pass/Fail course. Prerequisite: consent of instructor.

**PSYC 7952** Clerkship-Practicum in Clinical Psychology Cr.Hrs.0 Supervised practice in a clinical service facility operated by the university or approved by the clinical training program. Direct client contact to provide experience in assessment and therapy, based on case conceptualization and supervision by clinical faculty. Enrollment normally restricted to students in Clinical Psychology. Pass/Fail course. Prerequisite: consent of instructor.

**PSYC 7954** Clerkship-Practicum in Clinical Psychology Cr.Hrs.0 Supervised practice in a clinical service facility operated by the university or approved by the clinical training program. Direct client contact to provide experience in assessment and therapy, based on case conceptualization and supervision by clinical faculty. Enrollment normally restricted to students in Clinical Psychology. Pass/Fail course. Prerequisite: consent of instructor.

**PSYC 7956** Clerkship-Practicum in Clinical Psychology Cr.Hrs.0 Supervised practice in a clinical service facility operated by the university or approved by the clinical training program. Direct client contact to provide experience in assessment and therapy, based on case conceptualization and supervision by clinical faculty. Enrollment normally restricted to students in Clinical Psychology. Pass/Fail course. Prerequisite: consent of instructor.

**PSYC 7970** Internship in Clinical Psychology Cr.Hrs.0 (Formerly 017.797) Supervised practice in a clinical setting outside the university involving more responsible, more autonomous, and more professional work than is present in either clerkship or practicum. Prerequisite: four terms of PSYC 7910 (or 017.791) - PSYC 7950 (or 017.795).

**PSYC 7980** Internship in Clinical Psychology Cr.Hrs.0 (Formerly 017.798) Supervised practice in a clinical setting outside the university involving more responsible, more autonomous, and more professional work than is present in either clerkship or practicum. Prerequisite: four terms of

PSYC 7910 (or 017.791) - PSYC 7950 (or 017.795).

**PSYC 7990** The Psychology of Language Cr.Hrs.3 (Formerly 017.799) Examination of recent advances in the study of human language use. Topics such as memory for meaning, language development and language comprehension will emphasize the interactions between modern cognitive psychology and linguistics.

### Psychology -8000 Level

**PSYC 8010** Intergroup Behaviour Cr.Hrs.3 (Formerly 017.801) An investigation of intergroup processes, with particular emphasis on intergroup conflicts and the role of leadership in affecting these processes. Large social movements will receive particular attention.

**PSYC 8020** Theory and Methods in Social Psychology Cr.Hrs.3 (Formerly 017.802) The presentation of a number of broad theoretical overviews in social psychology and an introduction on the graduate level to the particular methodological problems encountered in social psychological research.

**PSYC 8030** Organizational Psychology Cr.Hrs.3 (Formerly 017.803) Group and individual factors as related to understanding complex organizations.

**PSYC 8040** Psychology of Aging Cr.Hrs.3 (Formerly 017.804) An intensive review of current research and theory. Biological, psychological, and social aspects of aging are related to each other.

**PSYC 8050** Human Brain Functions Cr.Hrs.3 (Formerly 017.805) The physiological basis of human cognitive processes is discussed from various perspectives. Different theories and different research strategies are discussed critically.

**PSYC 8080** Case Conceptualization and Communication 3 Cr.Hrs.3 In this course students will learn the theory and practice of case conceptualization and communication. Students will prepare and present clinical cases using well-defined models of treatment and case formulation strategies. Prerequisite: permission of instructor.

**PSYC 8090** Clinical Supervision in Psychology Cr.Hrs.3 This course will review the major models, ethical issues, and recommended strategies and practices of clinical supervision. Learning modalities will include discussion of readings, role-playing, and supervised supervision of student clinicians. Pass/Fail course. Prerequisite: permission of instructor.

**PSYC 8100** Social and Community Intervention Cr.Hrs.3 A general introduction to community psychology and community mental health. Historical, conceptual, and philosophical underpinnings of community psychology and community mental health; community assessment and intervention; alternative approaches to contemporary social problems; understanding social policy and the role of the public sector; community research methods. Not to be held with the former PSYC 8170 (017.817). Prerequisite:



permission of instructor.

**PSYC 8110** Program Evaluation and Consultation Cr.Hrs.3  
An overview of program evaluation and consultation as major areas of applied psychological practice; analysis of contemporary social and health problems; development, implementation, and evaluation of human service programs; understanding human service organizations; the role of consultant and common types of consultation; ethical issues in program evaluation and consultation. Not to be held with the former PSYC 8180 (017.818). Prerequisite: permission of instructor.

**PSYC 8120** Current Topics 2 Cr.Hrs.3  
(Formerly 017.812) An intensive survey of the contemporary research and theory in a selected field of psychology. As the course content will vary from year to year, students may take this course more than once for credit.

**PSYC 8200** Development and Its Deviations 1 Cr.Hrs.3  
(Formerly 017.820) Developmental deviations will be related to such factors as genetic influences, physiological development, early experiences, language, intellectual and mental abilities, social and ethnic influences, parent-child interactions, and peer group interactions. Methods of special treatment will be considered.

**PSYC 8210** Development and Its Deviations 2 Cr.Hrs.3  
(Formerly 017.821) A continuation of PSYC 8200 (or 017.820). It will focus on developmental processes during later childhood and adolescence emphasizing concurrently the range and significance of deviations from normal behaviour and conditions contributing to these problems. Methods of special treatment will also be considered. Prerequisite: PSYC 8200 (or 017.820).

**PSYC 8220** Topics in Abnormal Psychology Cr.Hrs.3  
(Formerly 017.822) An in-depth study of various areas in the field of psychopathology.

**PSYC 8230** Clinical Neuropsychology Cr.Hrs.3  
(Formerly 017.823) The understanding and evaluation of cognitive, sensory, and motor functions as they relate to cerebral dysfunction.

**PSYC 8240** Seminar in Behaviour Modification Cr.Hrs.3  
(Formerly 017.824) This seminar deals with a variety of specific topics in behaviour modification.

**PSYC 8250** Practical Applications of Behaviour Modification Cr.Hrs.3  
(Formerly 017.825) This course deals with the design, implementation, and evaluation of program packages, based on behaviour modification, to different population and problem areas.

**PSYC 8260** Individual Organism Research Methodology Cr.Hrs.3  
(Formerly 017.826) An extensive coverage of the methods by which behaviour can be studied in individual organisms, including the rationale for the use of such methods as opposed to methods involving the averaging of group data.

**PSYC 8270** Seminar in Basic Operant Research Cr.Hrs.3  
(Formerly 017.827) This seminar deals with selected topics in basic operant research.

**PSYC 8280** Supervised Field Study in Behaviour Modification 1 Cr.Hrs.3  
(Formerly 017.828) Supervised training will take place in a service facility typically located off the University campus. Students will work closely with a supervisor in assessing a problem, designing and executing an intervention program and conducting a followup. Prerequisite: permission of the instructor.

**PSYC 8282** Supervised Field Study in Behaviour Modification 1 Cr.Hrs.3  
Supervised training will occur in a setting typically located off campus. Students will work closely with a supervisor in assessing a problem, designing and executing an intervention program and conducting a follow-up with clients without developmental disabilities or autism. Prerequisite: written consent of instructor.

**PSYC 8290** Supervised Field Study in Behaviour Modification 2 Cr.Hrs.3  
(Formerly 017.829) Supervised training will take place in a service facility typically located off the University campus. Students will work closely with a supervisor in assessing a problem, designing and executing an appropriate intervention program and conducting a follow up. Prerequisite: permission of the instructor.

**PSYC 8292** Field Study in Behaviour Modification 2 Cr.Hrs.3  
Supervised training will occur in a setting typically located off campus. Students will work closely with a supervisor in assessing a problem, designing and executing an intervention program and conducting a follow-up with clients without developmental disabilities or autism. Prerequisite: written consent of instructor.

**PSYC 8300** Behavioural Assessment Cr.Hrs.3  
(Formerly 017.830) This course teaches students how to conduct behavioural assessment as a necessary feature of the three interrelated processes of problem identification, program design and outcome evaluation in the application of behaviour modification techniques. Prerequisite: permission of the instructor.

**PSYC 8330** Family Therapy Seminar Cr.Hrs.3  
(Formerly 017.833) This course deals with both family theory and practice by reviewing the current literature on family systems and providing case discussions, peer supervision and small group simulated tasks. Corequisite: current enrollment in PSYC 7910 (or 017.791) - PSYC 7950 (or 017.795) or GRAD 7030 (or 069.703) or permission of the instructor.

**PSYC 8360** Research Methods in Developmental Psychology Cr.Hrs.3  
(Formerly 017.836) A survey of concepts, strategies, and methods in the study of behavioural development, with emphasis on the problems encountered in the measurement of age-related change in humans.

**PSYC 8370** Logic of Research Design Cr.Hrs.3  
(Formerly 017.837) A survey of nonstatistical issues in research design, focusing on precise formulation of research questions and implication for research design. Design problems from various psychological areas are solved by students in the laboratory the purpose being to strengthen critical ability and to identify commonalities across areas in



methodological approach. Broader philosophical issues relevant to research design, such as the meaning of causality, are also addressed. Prerequisite: PSYC 8420 (or 017.842) or permission of instructor.

**PSYC 8380** History and Theory in Developmental Psychology Cr.Hrs.3  
(Formerly 017.838) A history of fundamental concepts in developmental psychology with consideration of important philosophical, theoretical, and empirical influences on the contemporary field.

**PSYC 8430** Cognitive Behaviour Therapy Cr.Hrs.3  
Students learn the theory and practice of empirically supported therapies that emphasize cognitive and behavioural methods. Opportunities for CBT skill development, which can be applied to a wide range of psychological problems, are provided. Students may not hold credit for PSYC 8430 and any of: the former PSYC 8340 (017.834) or the former PSYC 8400 (017.840). Prerequisite: written consent of instructor.

## Public Administration

**Head:** A/Head Steven Lecce

**Campus Address/General Office:** 532 Fletcher Argue

**Telephone:** (204) 474 9733

**Fax:** (204) 474 7585

**Email Address:** [political\\_studies@umanitoba.ca](mailto:political_studies@umanitoba.ca)

**Website:**

[http://umanitoba.ca/faculties/arts/departments/political\\_studies/index.html](http://umanitoba.ca/faculties/arts/departments/political_studies/index.html)

This master's program is offered jointly by the [Department of Political Studies](#) of the University of Manitoba and the [Department of Politics](#) at the University of Winnipeg. Unless otherwise specified by particular agreements attached to its own creation, it is governed by the general procedures and regulations devised by the two universities for joint master's programs.

The objective of the program is to provide students, both full and part-time, with a sound knowledge of public administration. The approach is interdisciplinary; although courses in Politics/Political Studies are emphasized. The core exposes all students to a common set of courses designed to encourage both innovative and integrative perspectives. The public administration emphasis allows those interested students to obtain knowledge of both the theory and the practice of government organizations, including knowledge of the political, economic, social and other contexts in which they operate.

### MPA-MBA stream:

Jointly offered by the Department of Political Studies and the [Asper School of Business](#), this MPA-MBA 12 credit-hour specialization in Business-Government Relations provides participating MPA and MBA students reciprocal opportunities to understand each others management environments, and to develop joint understandings such as how to maximize

business-government cooperation and synergies. In addition to their own program requirements, students enrolled in the stream take 9 c.h. of courses in the other discipline as well as a capstone 3 c.h. course in Business-Government Relations. (limited space)

### MPA Defence Administration stream:

A specialized stream offered to MPA students who are members of the Canadian Forces who are enrolled in, or who have completed, the [Aerospace Systems Course](#) (ASC) through the Canadian Forces School of Aerospace Studies (CFSAS) at 17 Wing Winnipeg. Successful completion of the ASC program reduces the MPA degree requirement to 24 c.h. In addition to the core requirements of the MPA degree, Defence Administration stream students take 6 c.h. of specially designed courses in the field of defence administration.

### Master of Public Administration , Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, applicants for admission to the program must be one of the following:

Persons holding a recognized three-or four-year General or Advanced Bachelors degree (B.A., B.Sc., B.E.S., etc.)

or

Persons holding a recognized four-year honours Bachelor's degree (or equivalent)

or

Persons who do not hold an undergraduate degree, but have attained positions of marked responsibility in either public or private sector management, and who have a demonstrated record of outstanding performance in their career. Admissions in this category will normally be restricted to one or two students per academic year.

It is preferred, but not required, that applicants have some formal course background in public administration, political science or economics. Students from other disciplines are also encouraged to apply.

### Application Deadline

Department deadline for applications for Regular Session is January 15

Contact the department for additional application procedures.

### Program Requirements



### Two-Year MPA Program

Students who are admitted as graduates of a general bachelor's degree program or who are admitted as exceptional candidates not holding an undergraduate degree are required to satisfactorily complete an academic program consisting of a minimum of 48 credit hours. Within the 48 credit hours, 27 hours of credit must be taken from among the Core Courses and a further 21 hours of credit from among the approved options. All students must complete up to 18 hours of credit at the 700/7000 level, including the 700/7000 level core courses. A student may elect, with permission, to write a Master's thesis in lieu of 12 credit hours of 700/7000 level option coursework.

### One-Year MPA Program

Students who are admitted as graduates of an Honours bachelor's degree (or equivalent) are required to satisfactorily complete an academic program consisting of a minimum of 24 credit hours. Students who, prior to admission, have not completed 24 credit hours in courses equivalent to those designated as 4000 level Core Courses, or have not completed appropriate option course equivalents, will normally be required to complete the appropriate course(s) in addition to the 24 credit hour program minimum. All students must complete up to 18 hours of credit at the 7000 level, including the 7000 level core courses. A student may elect, with permission, to write a Master's thesis in lieu of 12 credit hours of 7000 level option course work.

### Co-op Education Option in Public Administration

The Co-operative Education Option in the Master of Public Administration program combines full-time academic study with the benefits of practical work experience, largely in the public sector. A full-time student who has completed one academic year in good academic standing will be eligible to engage in full-time employment. The program requires the successful completion of two work-terms of 13 weeks each. The work terms provide students with practical experience, enriched knowledge in an area of policy specialization, industry-standard remuneration, and guidance in career choices.

Students engaged in full-time study in the M.P.A. program are eligible to apply for the full-time co-operative education option on satisfactory completion of their first year of full-time M.P.A. studies (24 credit hours). The co-op option consists of two 13-week work terms which can be taken consecutively or separately. Each work term carries three hours of course credit and each must be satisfactorily completed as part of the co-op option. Co-op credits do not replace academic credits, thus students in the two-year M.P.A. program with a co-op option must therefore complete a minimum of 54 credit hours as part of their degree requirements. Students in the one-year M.P.A. program with a co-op option must complete a minimum of 30 credit hours as part of their degree requirements. Students intending to apply for the M.P.A. co-op option should read the detailed option description below.

### Application and Eligibility

Application for the Co-operative Education Option in the Master of Public Administration (M.P.A.) program is part of the normal application process for the M.P.A. program as a whole. The Co-operative Education Option is restricted to those who apply for full-time study in the M.P.A. Students who are accepted into the M.P.A. with a co-operative option must, in their first academic year, successfully complete required non-credit courses in addition to their full-time academic course load.

### Work Terms and Continuance

On entry to the M.P.A. program, applicants accepted for the co-op option must arrange their program with the director of co-operative education in the MPA program and take part in a competitive job-matching process conducted in an Employers' Forum. Students who are eligible for co-op, but who are not matched with a co-op work term, will be able to continue in the regular M.P.A. program. Co-op students who have successfully completed one full academic year of coursework, and the required non-credit courses, and who have satisfied the M.P.A. requirements for continuation in the program, will be eligible to engage in their first work term placement. They must also complete relevant workshops, etc. to maintain co-op eligibility.

Each work term is 13 weeks duration and each work term carries three hours of course credit for which registration is required. Co-op students are considered to have full-time student status while engaged in a work term placement. Co-op students must successfully complete two work terms in addition to their academic program. Work terms are evaluated in terms for job performance and assigned written work (project or practicum). The final grade for each work term will employ the GPA scale which is used by the M.P.A. program. The course and grade requirements (B average overall and no course less than C+) for the co-operative education option are those which govern the M.P.A. program as a whole. If a co-op student fails to maintain these requirements, s/he will be permitted one make-up work term attempt. If a student fails to meet the requirements on the make-up attempt, s/he will be required to withdraw from the M.P.A. program.

### Ph.D. in Public Admin,

Public Administration does not offer a Ph.D. Program.

### Public Administration - ECON 3000 Level

**ECON 3170** Introduction to Quantitative Methods in Economics Cr.Hrs.3

(Formerly 018.317) Quantification of economic models; organization and presentation of economic data; probability; statistical estimation and testing of hypotheses with economic applications; simple regression. Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Economics] or written consent of instructor.



**ECON 3180** Introduction to Econometrics Cr.Hrs.3  
(Formerly 018.318) The application of statistical tools, especially regression analysis for estimating economic relationship and testing economic hypotheses. Also offered as ABIZ 3080 by Agricultural Economics. May not be held with ABIZ 3080 (061.308). Prerequisite: [a grade of "C" or better in ECON 3170 (018.317)] or [a grade of "C" or better in each of STAT 2000 (005.200) and six credit hours of 1000 level economics].

**ECON 3300** Canadian Economic History Cr.Hrs.6  
(Formerly 018.330) A study of Canada's economic growth with emphasis on the influence of Europe and the United States. Students may not hold credit for both ECON 3300 (018.330) and ECON 3301 (018.330). Prerequisite: none.

**ECON 3362** Labour Economics 1 Cr.Hrs.3  
An introduction to labour economics, including labour supply, labour demand and the determination of wages and employment. Students may not hold credit for both ECON 3362 and the former ECON 3360 (018.336). Prerequisite: a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

**ECON 3364** Labour Economics 2 Cr.Hrs.3  
Analysis of topics in labour economics such as unemployment, immigration, gender discrimination and the impact of unions. Students may not hold credit for both ECON 3364 and the former ECON 3360 (018.366). Prerequisite: a grade of "C" or better in ECON 3362.

**ECON 3374** Public Expenditure Analysis and Policy Evaluation Cr.Hrs.3  
The study of the role of government in the economy, government budget and expenditure evaluation issues, benefit-cost analysis, as well as government intervention regulation, public pricing, and ownership issues. Students may not hold credit for both ECON 3374 and the former ECON 3370 (018.337). Prerequisite: a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

**ECON 3376** Taxation, Tax Policy and Inter-government Public Finance Issues Cr.Hrs.3  
A study of the principles of taxation, tax policy in Canada and elsewhere, government deficit and debt issues and fiscal federalism with emphasis on inter-governmental finance issues. Students may not hold credit for both ECON 3376 and the former ECON 3370 (018.337). Prerequisite: a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

**ECON 3392** An Introduction to Development Economics Cr.Hrs.3  
The definition and major challenges of development and an introduction to theories of growth and development. Students may not hold credit for both ECON 3392 and the former ECON 3390 (018.339). Prerequisite: [a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270)] and [a grade of "C" or better in ECON 2470 or ECON 2471 (018.247) or ECON 2800 (018.280)] or written consent of instructor.

**ECON 3394** Development Economics: Problems and Policies Cr.Hrs.3  
Processes and problems of development policies to accelerate change. Economic relations between developed

and developing regions. Students may not hold credit for both ECON 3394 and the former ECON 3390 (018.339). Prerequisite: [a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270)] and [a grade of "C" or better in ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2800 (018.280)] and [a grade of "C" or better in ECON 3392 or ECON 2630 (018.263)] or written consent of instructor.

**ECON 3510** Industrial Relations Cr.Hrs.6  
(Formerly 018.351) A study of comparative employer-employee relationships in Canada and other selected countries as affected by market forces, social traditions, and government action. Students may not hold credit for both ECON 3510 (018.351) and LABR 3510 (153.351). Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Economics] or [a grade of "C" or better in both LABR 1260 (the former LABR 1270 or 153.127) and LABR 1290 (153.129)].

**ECON 3610** Special Studies Cr.Hrs.3  
(Formerly 018.361) This reading course will vary from year to year depending on the needs of students and the interests of instructors. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**ECON 3620** Special Studies Cr.Hrs.6  
(Formerly 018.362) This reading course will vary from year to year depending on the needs of students and the interests of instructors. Prerequisite: written consent of instructor. As the course content will vary from year to year, students may take this course more than once for credit.

**ECON 3640** Economics of the Financial System Cr.Hrs.3  
(Formerly 018.364) Flows of funds through the financial system; savings and investment and asset choices of households and firms; intermediation by financial institutions; arbitrage between and within countries, government financial policy, with special reference to Canada. Students may not hold credit for ECON 3640 (018.364) and any of: ECON 3641 (018.364) or FIN 3460 (009.346). Prerequisite: a grade of "C" or better in one of: ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2460 (018.246) or ECON 2461 (018.246) or ECON 2700 (018.270) or ECON 3700 (018.370).

**ECON 3650** Monetary Macroeconomics and Policy Cr.Hrs.3  
(Formerly 018.365) Demand for and supply of money; term structure of interest rates; tools of central banking; design and conduct of monetary policy. Students may not hold credit for both ECON 3650 (018.365) and ECON 3651 (018.365). Prerequisite: a grade of "C" or better in one of: ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2480 (018.248) or ECON 2481 (018.248) or ECON 2800 (018.280) or ECON 3800 (018.380).

**ECON 3660** Economic Ideas and Social Institutions Cr.Hrs.3  
(Formerly 018.366) A study of the nature and development of economic ideas: how they influence and are influenced by changing material and intellectual conditions and how they interact with evolving institutions in society. Students may not hold credit for both ECON 3660 (018.366) and ECON 3661 (018.366). Prerequisite: [a grade of "C" or better in six credit hours of 1000 level Economics] or written consent of



instructor.

**ECON 3670** International Trade Cr.Hrs.3

(Formerly 018.367) A study of the theory of international trade and modern trade issues including the effect of economic integration on growth, distribution, national policy and the environment. Prerequisite: a grade of "C" or better in one of: ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270). ECON 2460 (018.246) or ECON 2461 (018.246) is recommended.

**ECON 3680** International Finance Cr.Hrs.3

(Formerly 018.368) A study of the theory of international financial markets and issues in open economy macroeconomics focusing on the balance of payments, exchange rates and the effects of international financial integration on national economies. Prerequisite: a grade of "C" or better in one of: ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2800 (018.280). ECON 2480 (018.248) or ECON 2481 (018.248) is recommended.

**ECON 3690** Economic Issues of Health Policy Cr.Hrs.3

(Formerly 018.369) The structure, functioning and financing of the Canadian health care delivery system and the demand for health care in Canada. Prerequisite: a grade of "C" or better in six credit hours of 1000 level Economics.

**ECON 3700** Microeconomic Analysis 2 Cr.Hrs.3

(Formerly 018.370) An intensive study of the principles and techniques of microeconomic analysis including consumer theory, theory of the firm, market structures, factor markets and externalities. Students may not hold credit for ECON 3700 (018.370) and any of: ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2460 (018.246) or ECON 2461 (018.246). Prerequisite: written consent of department head.

**ECON 3710** Sustainable Development: Issues and Policy Cr.Hrs.3

(Formerly 018.371) An examination of the theory and practice of economic sustainability, ecological sustainability, and social sustainability, with emphasis on analysing current issues and designing policies to achieve sustainable development. Prerequisite: a grade of "C" or better in six credit hours of 1000 level Economics.

**ECON 3720** Urban and Regional Economics and Policies Cr.Hrs.3

(Formerly 018.372) An introduction to the study of the determinants of the spatial distribution of economic activity among urban centres and regions. Particular attention will be paid to such contemporary Canadian problems as regional disparities, urban and environmental decay, and urban renewal, and the policy issues involved in dealing with these problems. Prerequisite: a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

**ECON 3730** Topics in Mathematical Economics Cr.Hrs.3

(Formerly 018.373) Mathematical methods used in economic analysis. Topics will vary from year to year depending on the interests of instructors and students. Prerequisite: [a grade of "C" or better in ECON 2530 (018.253)] or written consent of instructor.

**ECON 3742** Industrial Organization and Firm Strategy Cr.Hrs.3

Market structure and firms' strategic decisions will be

analyzed. Topics may cover monopoly pricing strategies such as price discrimination; non-pricing strategies such as advertising, quality decisions and differentiated products; dynamic oligopoly models; mergers; anti-competitive behaviour; and auctions. This course assumes students have a sound background in economic theory, as well as single-variable calculus and basic statistics. Students may not hold credit for both ECON 3742 and the former ECON 3740 (018.374). Prerequisite: [a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270)] or consent of the instructor.

**ECON 3800** Macroeconomic Analysis 2 Cr.Hrs.3

(Formerly 018.380) An intensive study of the mainstream approaches to explaining output and inflation, including their mathematical structure and empirical implications. Students may not hold credit for ECON 3800 (018.380) and any of: ECON 2470 (018.247) or ECON 2471 (018.247) or ECON 2480 (018.248) or ECON 2481 (018.248). Prerequisite: written consent of department head.

**ECON 3810** Alternative Approaches to Macroeconomic Analysis Cr.Hrs.3

(Formerly 018.381) A survey of Post-Keynesian, Cambridge, Marxian, and institutionalist approaches to macroeconomic fluctuations, contrasting their theoretical and policy frameworks with those of mainstream macroeconomics. Prerequisite: written consent of department head.

## Public Administration -POLS 3000 Level

**POLS 3100** Gender and Politics in Canada Cr.Hrs.3

(Formerly 019.310) This course introduces the principal themes in the study of gender and politics in Canada. Topics may include women's political organizing and activism, representation in political institutions, the gendered division of labour in the private and public spheres, gender and public policy, and the gendered nature of political behaviour. Prerequisite: [a grade of "C" or better in POLS 2070 (019.207) or POLS 2071 (019.207)] or written consent of instructor or department head.

**POLS 3140** Selected Topics in Politics 1 Cr.Hrs.3

(Formerly 019.314) The content of this course will vary. Contact the department for a course description. Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 3150** Selected Topics in Politics 2 Cr.Hrs.3

(Formerly 019.315) The content of this course will vary. Contact department for a course description. Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 3160** Human Rights and Civil Liberties Cr.Hrs.3

(Formerly 019.316) An examination of the foundations of modern human rights systems in liberal democracies. Topics addressed include the main philosophical arguments on human rights, dominant legal theories of rights, and international conventions and systems of human rights protection. Prerequisite: [a grade of "C" or better in one of: POLS 2510 (019.251) or POLS 2511 (019.251)] or written consent of instructor or department head.



**POLS 3170** The Canadian Charter of Rights and Freedoms Cr.Hrs.3  
(Formerly 019.317) A systematic examination of the rights and freedoms contained in the Charter through Supreme Court decisions. Additional topics addressed include the historical, political and intellectual sources of rights protection in Canada and a review of Canadian human rights legislation. Prerequisite: [a grade of "C" or better in one of: POLS 2070 (019.207) or POLS 2071 (019.207)] or written consent of instructor or department head.

**POLS 3200** International Security and Conflict Management Cr.Hrs.6  
(Formerly 019.320) A study of contemporary world conflict, conflict management, and issues of global security. Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3220** Globalization and the World Economy Cr.Hrs.3  
(Formerly 019.322) An exploration of issues relating to globalization, including regionalism, economic structures and regimes, multinational corporations, global debt, problems in the developing world, and the future for leadership in the international system. Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3240** Feminist Political Theory Cr.Hrs.3  
(Formerly 019.324) An examination of feminist approaches to the status and participation of women in political life. The course also includes feminist discourse on ethical issues and state policy.

**POLS 3250** International Political Economy Cr.Hrs.3  
(Formerly 019.325) A survey of the relationship between political authority and the production and distribution of global wealth. Emphasis is placed on the historical development of international political economy, its fundamentals, as well as major theoretical perspectives. Students may not hold credit for both POLS 3250 (019.325) and POLS 3251 (019.325). Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3330** Politics of the European Union Cr.Hrs.3  
A study of the creation and evolution of the "European movement" which began after World War II as well as the various stages of European integration to the present day. Topics include institutional development; economic, monetary, and political union; and the global relations of the modern EU. Students may not hold credit for both POLS 3330 and the former POLS 2430 (019.243). Prerequisite: [a grade of "C" or better in one of: POLS 2000 (019.200) or POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3340** Middle East Politics Cr.Hrs.3  
An examination of the Middle East as a region of global strategic significance, with an emphasis on the major issues related to war and peace in selected Middle Eastern conflicts. Students may not hold credit for both POLS 3340 and POLS 3140 (019.314) when offered with the topic "Arab Israeli Conflict."

**POLS 3470** Canadian Public Management Cr.Hrs.3  
An introduction to the internal and external factors affecting

contemporary public sector management in Canada. The course will examine the primary values, policies, processes, and structures within the civil service. Prerequisite: [a grade of "C" or better in one of: POLS 2070 (019.207) or POLS 2071 (019.207) or POLS 2571 (019.257) or the former POLS 2570 (019.257)] or written consent of instructor or department head.

**POLS 3510** Political Doctrines of the Twentieth Century Cr.Hrs.6  
(Formerly 019.351) A survey of major contemporary systems of ideas which seek to explain or justify political behaviour.

**POLS 3520** Canadian Foreign and Defence Policy Cr.Hrs.6  
(Formerly 019.352) An examination of Canadian foreign and defence policy, with attention to contemporary events and issues. The course is designed to examine both foreign and defence policies as interdependent issues for Canadian interests. The course will assess the evolution and changing priorities of Canadian foreign and defence issues, with particular attention to Canada's relations with the United States, Europe, Asia and the Third World. Students may not hold credit for both POLS 3520 (019.352) and POLS 3561 (019.356). Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3570** Administrative Theory in the Public Sector Cr.Hrs.3  
A study of the fundamental principles with which to understand human behaviour inside public organizations. The course addresses a diverse but comprehensive set of historical and current theories, concepts and approaches in the field of public administration. Prerequisite: [a grade of "C" or better in one of: POLS 2000 (019.200) or POLS 2070 (019.207) or POLS 2571 (019.257) or POLS 3470 or the former POLS 2570 (019.257)] or written consent of instructor or department head.

**POLS 3600** Political Concepts Cr.Hrs.3  
(Formerly 019.360) An exposition and analysis of the role and meaning of terms central to political discourse. Among concepts to be studied are power, community, justice, freedom, equality and obligation. Prerequisite: [a grade of "C" or better in POLS 2510 (019.251) or POLS 2511 (019.251)] or written consent of instructor or department head.

**POLS 3640** Comparative Defence Policy Cr.Hrs.3  
(Formerly 019.364) The examination within a comparative framework of the factors determining the making and implementation of the defence policies of a number of representative and significant countries. Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3670** Canadian Political Parties Cr.Hrs.3  
(Formerly 019.367) This course provides students with an understanding of the origins, evolution, operation and programmes of Canadian political parties. Topics addressed include party types, party systems, party organization and financing, electoral activities and party leadership. Prerequisite: [a grade of "C" or better in one of: POLS 2070 (019.207) or POLS 2071 (019.207)] or written consent of instructor or department head.

**POLS 3710** Distributive Justice Cr.Hrs.3

A study of the question of whether, and to what extent, inequalities of various kinds are compatible with the demands of both justice and community. This course examines contending answers to the question by investigating classical and/or contemporary theories of distributive justice. Prerequisite: a grade of "C" or better in POLS 2510 (019.251) or POLS 2511 (019.251).

**POLS 3720** Politics, Government and Society in Ukraine Cr.Hrs.3

An analysis of political transition and development in Ukraine. Ukraine's international relations will also be examined. Students may not hold credit for both POLS 3720 and POLS 3140 (019.314) when offered with the topic "Government Politics in Ukraine" or the former POLS 2920 (019.292). Prerequisite: [a grade of "C" or better in one of: POLS 2000 (019.200) or POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3810** Introduction to Marxism Cr.Hrs.3

An overview of the thought of Karl Marx and Fredrick Engels, focusing on its philosophical origins, key concepts and ideas of their historical materialism, critique of political economy, political theory and philosophy. The development of Marxism after Marx and Engels, particularly in the tradition of Western Marxism, will be traced in the case of each concept and idea. Students may not hold credit for both POLS 3810 and the former POLS 4810 (019.481).

**POLS 3840** Approaches to the Study of International Relations Cr.Hrs.3

(Formerly 019.384) An overview of the various competing theoretical approaches used in the analysis of international relations, as well as the methodologies used by international politics analysts. Students may not hold credit for both POLS 3840 (019.384) and POLS 3841. Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3860** Canadian Federalism Cr.Hrs.3

(Formerly 019.386) An examination of Canadian federal structures and processes with emphasis on constitutional influences, the evolution of jurisdictions, province-building and contemporary federal issues.

**POLS 3880** Comparative Foreign Policy Cr.Hrs.3

(Formerly 019.388) A comparative study of the factors affecting foreign policy in selected countries including, but not limited to, Canada, the United States, Russia, China, Japan, Great Britain, France, and Germany. The course also includes an examination of international, regional, and domestic factors affecting the creation of foreign policy by states. Prerequisite: [a grade of "C" or better in POLS 2040 (019.204) or POLS 2041 (019.204)] or written consent of instructor or department head.

**POLS 3920** American Politics Cr.Hrs.6

(Formerly 019.392) An examination of institutions, processes, public policies, and current public affairs in the United States. Prerequisite: [a grade of "C" or better in POLS 2000 (019.200)] or written consent of instructor or department head.

**POLS 3930** Foreign Policy Decision-Making Cr.Hrs.6

(Formerly 019.393) The analysis and construction of selected theoretical models of the foreign policy decision-making process. The case studies examined will refer primarily, but not exclusively, to U.S. foreign policy decision-making. Students may not hold credit for both POLS 3930 (019.393) and POLS 3931 (019.393).

**POLS 3950** Research Methods in the Study of Politics Cr.Hrs.3

(Formerly 019.395) An introduction to the major quantitative and qualitative research strategies employed in the study of politics. The topics addressed include interviewing, content analysis, comparative studies, survey design, sampling, research ethics and basic statistical analysis. Prerequisite: [a grade of "C" or better in six credit hours of Political Studies at the 2000 level] or written consent of instructor or department head.

**POLS 3960** Canadian Politics Cr.Hrs.6

(Formerly 019.396) An examination of recurrent issues and problems in the Canadian political culture including the evolution of parties and ideologies, and issues such as regionalism, dualism, continentalism, civil liberties and the interventionist state. Prerequisite: [a grade of "C" or better in POLS 2070 (019.207) or POLS 2071 (019.207)] or written consent of instructor or department head.

**Public Administration -POLS 4000 Level****POLS 4140** Canadian Political Ideas Cr.Hrs.3

An examination of the ideas that underlie Canadian politics. What are the values at the centre of political movements in Canada and where do they come from? How have these values changed over time and why? We will attempt to answer these questions by exploring the development of Canadian political ideas as well as our current ideological context in Canada. Effort will be made to reflect on ideological debate on contemporary issues of the day. Prerequisite: written consent of instructor or department head.

**POLS 4150** Indigenous Governance Cr.Hrs.3

An examination of Indigenous governance before and since the 'European invasion' which introduces key themes, debates and controversies pertaining to Indigenous governance and its study. Students may not hold credit for both POLS 4150 and POLS 4160 (019.416) when offered with the topic "Indigenous Governance." Prerequisite: written consent of instructor or department head.

**POLS 4160** Selected Topics in Politics 3 Cr.Hrs.3

(Formerly 019.416) The content of this course will vary. Contact department for a course description. Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 4170** Selected Topics in Politics 4 Cr.Hrs.3

(Formerly 019.417) The content of this course will vary. Contact department for a course description. Prerequisite: written consent of instructor or department head. As the course content will vary from year to year, students may take this course more than once for credit.



**POLS 4180** Provincial Politics in Canada Cr.Hrs.3  
(Formerly 019.418) The course focuses on politics at the provincial level in Canada and on the politics of the regions: Atlantic, Quebec, Ontario, the West and BC. Emphasis is on a comparison of political cultures, governments, budgets, parties, elections, and political change across the regions. Prerequisite: written consent of instructor or department head.

**POLS 4190** Manitoba Politics and Government Cr.Hrs.3  
(Formerly 019.419) An examination of politics and government in modern Manitoba. Topics addressed include federal-provincial relations, parties and elections, political culture, the legislative process and public policy. Prerequisite: written consent of instructor or department head.

**POLS 4370** Comparative Public Administration Cr.Hrs.3  
A study of the systems, processes, and values of public administration in an international comparative context. Topics include public sector organization and reform, international standards of policy and practice, and the role of international institutions in promoting public sector modernization. The course covers countries from several geographic zones and places domestic issues in the larger, global political economy. Prerequisite: written consent of instructor or department head.

**POLS 4470** Managing Modern Government Cr.Hrs.3  
A study of the skills required to effectively manage in the public sector. Topics covered include: managerial effectiveness, written and interpersonal communication, gaining power and influence, working with political staff and politicians, conflict management, risk management, performance management, creating and working through teams, decision-making, motivation, and empowerment. Students may not hold credit for both POLS 4470 and the former POLS 4570 (019.457). Prerequisite: written consent of instructor or department head.

**POLS 4510** Advanced History of Political Ideas Cr.Hrs.3  
(Formerly 019.451) An in-depth analysis of selected texts in the history of political theory with a focus on ideas and concerns relevant to contemporary political life. Prerequisite: written consent of instructor or department head.

**POLS 4530** Regionalism in International Relations Cr.Hrs.3  
(Formerly 019.453) This course examines the nature and substance of political relations among states in the international system to institutionalize relations for economic, political, or security reasons. Emphasis is given to post-1945 and contemporary regional relationships. Regional arrangements studied in the course include, but are not necessarily limited to, North America, Europe, the Asia-Pacific rim, the Middle East, Latin America, and Africa. Students may not hold credit for both POLS 4530 (019.453) and POLS 4830 (019.483). Prerequisite: written consent of instructor or department head.

**POLS 4610** Contemporary Political Theory Cr.Hrs.3  
(Formerly 019.461) An examination of recent developments in the analysis of political ideas, institutions, and behaviour. Prerequisite: written consent of instructor or department head.

**POLS 4660** The State in the Economy Cr.Hrs.6  
(Formerly 019.466) Drawing from literature in Canadian

political economy, this course will examine historical and contemporary patterns and forms of Canadian state involvement in the economy. Both federal and provincial contexts will be studied and selected areas of current interest, such as the role of crown corporations and industrial policy, will be emphasized. Prerequisite: written consent of instructor or department head.

**POLS 4710** Political Theory and the Family Cr.Hrs.3  
An examination of the normative aspects of the relations between children, families and the state. Prerequisite: written consent of instructor or department head.

**POLS 4730** Strategic Studies Cr.Hrs.6  
(Formerly 019.473) An examination of the role, management, and politics of organized force in the international system. Prerequisite: written consent of instructor or department head.

**POLS 4860** The Canadian Policy Process Cr.Hrs.6  
(Formerly 019.486) This course will examine a number of conceptual frameworks for the analysis of the policy process, will analyze the role of different institutions and actors in the policy process, and will appraise current government responses to problems within Canadian society. Prerequisite: written consent of instructor or department head.

**POLS 4940** American Foreign Policy Cr.Hrs.6  
(Formerly 019.494) An analysis of the foreign policy of the United States from 1945 to the present, focusing on the explanation of the foreign policy decisions taken and the policy-making process giving rise to them. Prerequisite: written consent of instructor or department head.

### Public Administration -POLS 6000 Level

**POLS 6010** The Manitoba Legislative Internship Seminar Cr.Hrs.6

(Formerly 019.601) This credit is granted to six individuals who annually complete the assignment as Legislative Interns within the Manitoba Legislative Assembly.

**POLS 6500** Co-operative Education Work 1 Cr.Hrs.3  
(Formerly 019.650) This credit is granted to full time registered students in the Master of Public Administration who have registered in the co-op option of the program. Eligible candidates must have attended two mandatory workshops and completed a minimum 24 credit hours of course work prior to the first work term placement. Work terms are paid positions by employers primarily in the public sector. Work terms are a minimum of 13 weeks.

**POLS 6510** Co-operative Education Work 2 Cr.Hrs.3  
(Formerly 019.651) This credit is granted to full time registered students in the Master of Public Administration who have registered in the co-op option of the program. Eligible candidates must maintain full time status and have attended two mandatory workshops, completed a minimum 24 to a maximum of 48 credit hours of course work, and successfully completed a first work term prior to the second work term placement. Work terms are paid positions by employers primarily in the public sector. Work terms are a minimum of 13 weeks.



## Public Administration -POLS 7000

### Level

**POLS 7280** Directed Readings in Politics Cr.Hrs.3  
(Formerly 019.728) An independent reading and/or research course on a selected topic in political studies, undertaken and arranged in consultation with the prospective instructor, upon the approval of the Graduate Committee. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 7290** Directed Readings in Politics 2 Cr.Hrs.6  
(Formerly 019.729) An independent reading and/or research course on a selected topic undertaken and arranged in consultation with the prospective instructor, upon approval of the Graduate Committee. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 7300** Directed Readings in Public Administration Cr.Hrs.3  
(Formerly 019.730) An independent reading and/or research course on a selected topic undertaken and arranged in consultation with the prospective instructor, upon approval of the Graduate Committee. As the course content will vary from year to year, students may take this course more than once for credit.

**POLS 7330** State-Civil Society Relations Cr.Hrs.3  
An examination of how the state relates to civil society actors, notably the voluntary sector in Canada. Students will critically assess the role voluntary organizations play - and should play - in governing process.

**POLS 7340** Canadian Government Cr.Hrs.3  
(Formerly 019.734) Examines the core institutions of Canadian Government and politics including parliamentary government, federalism, the Constitution and the Charter of Rights and Freedoms. Students may not hold credit for both POLS 7340 (or 019.734) and the former 019.776.

**POLS 7350** Canadian Democracy Cr.Hrs.3  
(Formerly 019.735) Examines the core institutions and processes of Canadian democracy including political parties, elections, voting, social movements, interest groups and public opinion. Students may not hold credit for both POLS 7350 (or 019.735) and the former 019.776.

**POLS 7370** Seminar in the Theory and Practice of Public Administration Cr.Hrs.6  
(Formerly 019.737) The intent of this course is to provide insight into the exigencies of actual public administration. The course will be conducted on a topical basis within the framework of certain trends facing Canadian governments today. (The course will attempt to utilize, to the fullest extent possible, the particular expertise of students in the program, faculty members, and of both elected and appointed public officials.) Students may not hold credit for both POLS 7370 (or 019.737) and the former 019.731.

**POLS 7410** Selected Topics in Political Behaviour 1 Cr.Hrs.3  
(Formerly 019.741) A systematic examination of empirical research in the area of political socialization and political culture. Students may not hold credit for both POLS 7410 (or

019.741) and the former 019.725.

**POLS 7470** Strategic Human Resource Management in Government Cr.Hrs.3  
A study of the human resource management functions, including planning, staffing, training, performance management, compensation and labour relations, in ways that optimize organizational performance. This course will also address contemporary challenges including recruitment and retention, managing change, demographic shifts, and information technology.

**POLS 7520** The Political Classics Cr.Hrs.3  
(Formerly 019.752) A thorough study of selected works with special attention to methodology, historical content, theoretical position and universal significance. Students may not hold credit for both POLS 7520 (or 019.752) and the former 019.771.

**POLS 7530** International Political Economy Cr.Hrs.3  
(Formerly 019.753) An examination of the systematic study of international political economy. Particular attention is paid to the foreign economic policies of advanced industrialized states and the various issues surrounding the redistribution of wealth and influence in the contemporary international system.

**POLS 7550** Contemporary Issues in Canadian Politics Cr.Hrs.3  
(Formerly 019.755) A seminar series examining a contemporary debate in Canadian politics and government. The specific topic will vary from year to year depending on faculty interest and specialization.

**POLS 7610** Political Theory and Contemporary Issues Cr.Hrs.3  
(Formerly 019.761) An examination of recent theoretical perspectives on contemporary political institutions, problems and values. Students may not hold credit for both POLS 7610 (or 019.761) and the former 019.771.

**POLS 7710** Liberalism and Its Critics Cr.Hrs.3  
An advanced study of liberalism and various theoretical challenges to its ethical and political claims.

**POLS 7720** Comparative Government Cr.Hrs.6  
(Formerly 019.772) Three hours a week, both terms. The primary focus of this course will be on the major Western "democracies" (e.g., United Kingdom, United States, and Western Europe). Phenomena to be examined include political participation and the problems of social change in industrial societies.

**POLS 7790** International Relations Theory Cr.Hrs.3  
(Formerly 019.779) A critical assessment of basic theories and models used in International Relations, emphasizing theoretical approaches and research. Students may not hold credit for both POLS 7790 (or 019.779) and the former 019.773.

**POLS 7850** Contemporary Strategic and Security Studies Cr.Hrs.6  
(Formerly 019.785) An advanced course in strategic studies. The evolution of strategic thought in the modern period will be examined, and particular emphasis will be placed on the role of armed force in relation to the problem of international security. Students may not hold credit for both POLS 7850



(or 019.785) and the former 019.783. Normally students will be expected to have taken POLS 4730 (or 019.473) or its equivalent as prerequisite.

**POLS 7910** Multivariate Research Methods Cr.Hrs.3 (Formerly 019.791) Introduction to the theory and application of multivariate regression models in political analysis. Students may not hold credit for POLS 7910 (or 019.791) and either the former 019.732 or 019.788.

### Public Administration -POLS 9000 Level

**POLS 9010** UW POL 4301 Administrative Theory Cr.Hrs.6 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9020** UW POL 4400 Seminar in Canadian Politics Cr.Hrs.6 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9030** UW POL 4415 State and Economy Cr.Hrs.6 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9090** UW POL 7331 Directed Readings in Public Administration Cr.Hrs.6 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9120** UW POL 4220 Liberty and Community in Modern Canadian Political Thought Cr.Hrs.6 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9230** UW POL 4410 Seminar in Women in Politics Cr.Hrs.3 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9240** UW 4505 Politics of Urban Planning Cr.Hrs.6 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9340** UW POL 7300 Seminar in Theory and Practice of Public Administration I Cr.Hrs.3 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9350** UW POL 7305 Seminar in Theory and Practice of Public Administration II Cr.Hrs.3 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9370** UW POL 7320 Seminar in the Public Policy Process Cr.Hrs.3 Course may be taken as part of a Master of Public

Administration program offered jointly with the University of Winnipeg.

**POLS 9380** UW POL 7325 Seminar in Public Policy Issues Cr.Hrs.3 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9390** UW POL 4200 Feminist Political Thought Cr.Hrs.3 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9460** UW POL 7505 Politics of Urban Planning Cr.Hrs.6 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9470** UW POL 7335 Directed Readings in Public Administration Cr.Hrs.3 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9480** UW POL 4305 Administrative Law Cr.Hrs.3 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9490** UW POL 4600 Directed Readings Cr.Hrs.6 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9500** UW POL 4605 Directed Readings Cr.Hrs.3 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9540** UW POL 4515 Inner City Seminar Cr.Hrs.6 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9550** UW POL 4320 Strategic Planning in Organizations II Cr.Hrs.3 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9570** UW POL 4100 Seminar in Global Politics Cr.Hrs.3 Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9602** UW POL 7380 Special Topics Seminar in Public Administration Cr.Hrs.6 University of Winnipeg Course: Special Topics Seminar in Public Administration.

**POLS 9604** UW POL 4385 Special Topics in Public Administration Cr.Hrs.3 University of Winnipeg Course: Special Topics in Public



Administration.

**POLS 9606** UW POL 7385 Special Topics in Public Administration Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

**POLS 9608** UW POL 4121 Special Topics in Global Politics Cr.Hrs.3  
Course may be taken as part of a Master of Public Administration program offered jointly with the University of Winnipeg.

## Religion

**Head:** (Acting) Ian Whicher

**Campus Address/General Office:** 328 Fletcher Argue

**Telephone:** (204) 474 9516

**Fax:** (204) 474 7601

**Email Address:** [religion@umanitoba.ca](mailto:religion@umanitoba.ca)



**Website:**

<http://www.umanitoba.ca/faculties/arts/departments/religion/>

The Department of Religion began offering M.A. courses in 1976, and was authorized in 1992 to offer a Ph.D. Program. The M.A. is offered as a Joint Program in co-operation with the Department of Religion and Culture (formerly Religious Studies) at the University of Winnipeg. The Ph.D. in Religion is offered solely at the University of Manitoba.

These highly successful programs have graduated students in Biblical studies, history of Christianity, world religions, Asian religions, Islam, women and religion, hermeneutics, critical theory and other religion and culture fields.

### Fields of Research

Research specialization in the department include world religions, studies in Hebrew and New Testament Scriptures,

Christianity, Judaism; Islam, Buddhism, Hinduism, religion and cultures of western antiquity, ethics, methodology, body history, hermeneutics, critical theory and gender and sexuality.

### Research Facilities

Department programs are supported by substantial library holdings. Required research languages are offered either through the department or through affiliated units. Students have access to the computer lab that also serves as a meeting and study space.

### M.A. in Religion, Admission

The Department of Religion at the University of Manitoba and the Department of Religion and Culture (formerly Religious Studies) at the University of Winnipeg offer a joint Master of Arts program. Eligible for admission are graduates of the University of Manitoba holding a B. A. (Honours) degree in Religion; graduates of the University of Winnipeg holding a B.A. (four-year) in Religion and Culture; students who hold degrees equivalent to the B.A. (Honours) in Religion from other recognized universities or colleges; students who have completed a recognized pre-Master's program in Religion. Students who have courses with equivalent content or cognate courses in recognized departments or faculties other than Religion or Religious Studies may be given credit for up to 12 credit hours towards admission. To be eligible for admission, applicants must have achieved a cumulative grade point average of at least 3.0 (on a 4.0 point scale) in their last 60 credit hours of study and they must have completed a total of 60 credit hours in Religion. Breadth in preparation is expected as indicated by the description of the B.A. (Honours) in Religion in the *University of Manitoba Undergraduate Calendar*, or the four-year B.A. in Religious Studies in the *University of Winnipeg Calendar*. Applications will be considered from B.A. (Honours) graduates in other disciplines with a strong background in Religion. Such students may be admitted at the pre-Master's level and required to complete a program of study as specified by the department. Applicants are also to submit a representative sample of written academic work, and two letters of references. Contact the Department of Religion for further information.

### Application Deadlines

The Department of Religion accepts applications for September admission. (January admission will be considered only in exceptional circumstances.) Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date. **NOTE:** Applicants who wish to be considered for funding are to submit their application for admission to the Faculty of Graduate Studies **by January 15** for admission to the JMP for the following September.



### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. All JMP students must have obtained **6 credit hours in Methodology** (3 credit hours in methodology for the study of Eastern Religions **and** 3 credit hours in methodology for the study of Western Religions) from a recognized university or college. Students entering the program who do not have 6 credit hours in methodology must satisfy this requirement in addition to the required credit hours of coursework needed for completion of MA program. Two types of program are available:

**Thesis Option:** minimum of 12 credit hours of coursework including:

- a) Major courses: a minimum of six credit hours at the 7000 level;
- b) Ancillary courses: a minimum of six credit hours at the 7000, 4000(UM)/5000(UW), or in special cases, at the 3000(UM)/ 3000(UW) level;
- c) Demonstrated competence in a research language relevant to their area of study (typically satisfied by successfully completing language translation examinations);
- d) Oral defense of thesis.

### Course and Comprehensive Option:

Students who choose this route must complete a minimum of 24 credit hours of graduate courses from one or both of the two departments involved in the JMP in Religion, with at least 18 credit hours to be taken at the 7000 (UM) / 7000 (UW) level, and at least 18 credit hours to be in Religion. Students may take 6 credit hours at the 4000 (UM) / 5000 (UW) level, and this is usually chosen from an extra-departmental field or ancillary. Students can, however, elect to take all 24 credit hours from within the two departments of the JMP in Religion.

Second Language Reading Requirement: Yes

Expected Time to Graduate: two years

### Ph.D. in Religion, Admission

Applications for admission to the Ph.D. program in Religion are accepted based on the availability of faculty and research resources. Students applying to the PhD program must have maintained at least a 3.5 average in their work at the MA level.

Admission requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Normally a thesis based M.A. in Religion (with

a minimum cumulative GPA of 3.5) or its equivalent will be required for entry into the Ph.D. program. Applicants must have previously obtained at least 6 credit hours of training in methodology (3 credit hours in methodology for the study of Eastern Religions and 3 credit hours in methodology for the study of Western Religions). Applications should include a research proposal (typical length is 8-10 pages including bibliography), a representative sample of written academic work, and two letters of references. Contact the Department of Religion for further information.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the department at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the department at least 7 months prior to their intended start date. **NOTE:** The Department of Religion accepts applications for admission to the Ph.D. program for September entry only.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students accepted into the program are required to complete a minimum of 18 credit hours of coursework at the 7000 level. In addition, students must have at least 6 credit hours of current training in methodology (3 credit hours in methodology for the study of Eastern Religions and 3 credit hours in methodology for the study of Western Religions). Students must maintain a minimum grade point average (GPA) of 3.0 with no grade below C+ for continuance in the program.

Students in the Ph. D. program must demonstrate competence in two research languages relevant to the proposed doctoral thesis. The research languages are determined on an individual basis by the student's advisory committee. Language requirements are normally satisfied by students successfully completing language translation examinations.

Second language requirement: yes

Expected time to graduation: approximately 4 years

### Religion -7000 Level

#### RLGN 7020 Special Topics 1 Cr.Hrs.3

(Formerly 020.702) Description not available for this course. As the course content will vary from year to year, students may take this course more than once for credit.

#### RLGN 7030 Special Topics 2 Cr.Hrs.3

(Formerly 020.703) Description not available for this course. As the course content will vary from year to year, students may take this course more than once for credit.



**RLGN 7080** Seminar in Research Methods and Theory Cr.Hrs.3  
(Formerly 020.708) Description not available for this course.  
For doctoral students only.

**RLGN 7130** Seminar in Hinduism Cr.Hrs.3  
An advanced study of select aspects of the Hindu tradition.

**RLGN 7140** Seminar in Buddhism Cr.Hrs.3  
An advanced study of select aspects of the Buddhist tradition.

**RLGN 7150** Seminar in Islam Cr.Hrs.3  
An advanced seminar in the study of Islam.

**RLGN 7160** Seminar in Judaism Cr.Hrs.3  
An advanced seminar in the study of Judaism.

**RLGN 7170** Seminar in Formative Christianity Cr.Hrs.3  
Advanced studies in selected aspects of formative Christianity.

**RLGN 7180** Seminar in Early Modern, Modern and Contemporary Christianity Cr.Hrs.3  
Advanced studies in developments of Western Christianity since 1500.

**RLGN 7190** Seminar in Religion and Philosophy Cr.Hrs.3  
Examination of the relation between religion and philosophy through selected figures and themes.

**RLGN 7200** Seminar in Religion and Psychology Cr.Hrs.3  
Examination of selected developments in psychology and religion and religion and/or in psychoanalysis and the study of religion.

**RLGN 7210** Studies in Religious Concepts and Practices Cr.Hrs.3  
Advanced study of selected religious concepts and practices topics.

**RLGN 7220** Seminar in Religions and Historiography Cr.Hrs.3  
Advanced studies in the interactions among specific religious traditions, ideologies and historiography.

**RLGN 7230** Thesis Seminar Cr.Hrs.3  
Exploration of a range of academic writing techniques and of their theoretical aspects.

**RLGN 7240** Textual Studies in Original Languages Cr.Hrs.3  
Close study of primary texts in their original languages.

**RLGN 7250** Research Seminar Cr.Hrs.3  
Study of selected theoretical and methodological issues in the study of religion.

**RLGN 7270** Seminar in Christianity Cr.Hrs.3  
Critical study or selected historical and/or theoretical issues in selected periods of Christianity.

**RLGN 7300** Seminar in Religion and Culture Cr.Hrs.3  
Study of selected religion-and-culture figures, issues, or themes.

### Religion -8000 Level

**RLGN 8260** Seminar in Hinduism Cr.Hrs.3  
Critical study of selected aspects of the Hindu tradition.

**RLGN 8280** Seminar in Islam Cr.Hrs.3  
Selected issues in the study of Islam.

**RLGN 8290** Seminar in Buddhism Cr.Hrs.3  
Study of selected issues, traditions, and texts in the development of Buddhism.

**RLGN 8310** Seminar in Judaism Cr.Hrs.3  
Selected issues in the study of Judaism.

### Religion -9000 Level

**RLGN 9190** UW REL 3999 Languages for Religious Studies Cr.Hrs.6

Course may be taken as part of a Master of Religion program offered jointly with the University of Winnipeg.

**RLGN 9290** UW REL 3030 Intermediate Chinese Cr.Hrs.6  
Course may be taken as part of a Master of Religion program offered jointly with the University of Winnipeg.

## Social Work

**Dean:** Harvy Frankel

**Associate Dean(s):** Diane Hiebert-Murphy (Graduate)

**Program Director:** Don Fuchs

**Campus Address/General Office:** 521 Tier Building

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**Academic Staff:** Please refer to our website for Academic staff information: [http://umanitoba.ca/social\\_work](http://umanitoba.ca/social_work)

### Master of Social Work, Program Information

The Faculty has operated since 1943 and there are two different concentrations available through which students may receive M.S.W. degrees. They are addressed to the differing interests that are common within advanced social work practice and are identified in this curriculum as Social Services Administration and Social Clinical. The M.S.W. degree is fully accredited and recognized internationally as both a professional and academic qualification.

### Social Services Administration Stream

The stream's aim is to educate progressive social work managers, program evaluators, and policy analysts within the public, voluntary, and private sectors. A critical approach is used for examination of power, oppression, and resistance. Organizational theories, strategies, analyses of social service administration practice are examined.



Students acquire strong analytical and practice skills in policy analysis and social service administration. Through critical review of theories, techniques, and case study applications, students learn to develop and apply different models of social service administration, planning, implementation, and the evaluation of social policies and programs.

### Social Clinical Stream

This stream is based on an eco-systemic perspective, while also incorporating anti-oppressive and anti-colonial perspectives. This view provides a broad context for social work practice by emphasizing the interrelatedness of individuals, families, groups, and communities and their relationships with social institutions and cultural forces. The family unit, broadly defined, is given particular focus.

#### Social Work Program Description,

Graduates of this program currently occupy a wide range of positions within the human services in Canada and throughout the world. While the majority of graduates work within the social service sector others have become active as politicians, scholars, senior civil servants, private consultants and are also active in a wide range of fields such as international development work and the creation of information systems.

While the program covers the core material which is essential to social work practice there has been particular attention given to issues relevant to women and the Aboriginal communities. Many graduates are Aboriginal persons and are actively involved in the creation and operation of the Aboriginal human services organizations.

Considerable attention is given to issues of educational equity. In addition to treating these matters as course content, every effort is made to ensure that people from disadvantaged groups have access to the M.S.W. program. The purpose of this initiative is to achieve equality in professional education so that no person shall be denied educational opportunities or benefits for reasons unrelated to ability. In the fulfillment of this goal the aim is to correct the conditions of disadvantage in professional education experienced by Aboriginal peoples, persons with disabilities, immigrants and refugees to Canada, Gender and Sexual Minorities' group members and persons who are members of a visible minority in Canada. Educational equity means more than treating persons in the same way, it also requires special measures and the accommodation of difference.

### Fields of Research

The faculty are involved with research in virtually all areas of the human services covering clinical, administrative and planning issues. A partial list of current research includes questions regarding gender, international social development, ethnicity, the justice system, services for Aboriginal people, rural and northern development, family violence, day care, issues concerning disabled persons, the immigrant experience, the development of clinical services,

the political economy of the welfare state, the nature and treatment of pain, and services in child welfare.

### Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, the deadline for submission of applications to the program is January 15th for Canadian citizens and permanent residents and December 1st for International applicants.

### M.S.W. Admissions Criteria

- Possession of a B.S.W. degree (by June 30<sup>th</sup> of the application year) from an accredited university which is recognized by the University of Manitoba.
- A Minimum Grade Point average of 3.0 (B) is required in the last 60 credit hours of university study.
- If courses have been taken subsequent to the degree as a Special Student and/or Occasional Student and/or in a subsequent degree or a Pre-Master program, they will be calculated into the Grade Point Average as part of the last 60 credit hours.
- Applicants who self-identify as members of one or more of the Educational Equity priority groups and who possess a Grade Point Average between 2.5 and 2.99 will be reviewed for special consideration. Applicants with Adjusted Grade Point Averages below 2.5 will not be considered.

### Pre-M.S.W. Admissions Criteria

- Possession of, or eligible for the granting of, a degree other than Social Work at point of application from an accredited university which is recognized by the University of Manitoba. Persons who plan to graduate in May of the year of application are not eligible for admission.
- One year (1680 hours) of relevant social work experience, paid or volunteer (see application package for details).
- A minimum Grade Point Average of 3.0 (B) is required in the last 60 credit hours of the university study.
- If courses have been taken subsequent to the degree as a Special Student and/or Occasional Student and/or in a subsequent degree or a Pre-Master program, they will be calculated into the Grade Point Average as part of the last 60 credit hours.
- Applicants who self-identify as members of one or more of the Educational Equity priority groups and who possess a Grade Point Average between 2.5 and 2.99 will be reviewed for special consideration. Applicants with adjusted grade point averages below 2.5 will not be considered.

### Occasional Students



An Occasional Student in Social Work is one who wishes to take graduate courses with no intention of proceeding to the Pre-M.S.W. program or the Master degree in social work at the present time. Pre-M.S.W. program courses available to Occasional Students holding a previous 4 year degree in a discipline other than social work (e.g., B.A., B.Ed.):

SWRK 3100	Systematic Inquiry in Social Work	3
SWRK 6030	Canadian Social Welfare Policy	6
SWRK 6040	Anti-Oppressive Social Work Practice	3
SWRK 6060	Social Work and Aboriginal People	3

The maximum number of credit hours permitted is six credit hours, plus SWRK 3100 (3 credit hours).

M.S.W. program courses available to Occasional Students holding a previous degree in social work and non-social work students currently registered in another graduate program:

SWRK 6010	Data Analysis for Social Work Research	3
	or	
SWRK 6070	Qualitative Research in Social Work	3
SWRK 7290	Family-Focused Social Work Practice	6
SWRK 7300	Clinical Evaluation of Social Work Interventions	3
SWRK 7310	Social Service Administration Practice	6
SWRK 7400	Theoretical Foundations of Social Service Administration	3
SWRK 7420	Theoretical Foundations of Social Policy Analysis, Planning and Evaluation	3
SWRK 7230	Problem Seminar (Several topics are offered each year.	3

Consult timetable for current titles being offered)

SWRK 7390	Advanced Social Work Practice Seminar	3
SWRK 7430*	Evaluation Research in Social Work Practice	3
SWRK 7440	Policy Analysis in Social Work Practice	3

The maximum number of credit hours permitted is 6 credit hours plus SWRK 6010 (3 credit hours) or SWRK 6070 (3 credit hours).

All Occasional and non-social work students are required to abide by the same pre/co-requisite policy that applies to Social Work students.

\*Pre/co-requisite SWRK 6010 or SWRK 6070

### Educational Equity Initiative

For the purpose of identification the definitions for the Educational Equity priority groups are:

Aboriginal Peoples: All indigenous peoples of Canada including: First Nations, Metis, Denè and Inuit.

Visible Minorities: Persons other than Aboriginal peoples who, because of their colour, are a visible minority in Canada.

Immigrants: Immigrants are those who do not record Canadian citizenship by birth, and whose native tongue is NOT English.

Refugees: A Refugee is an individual who has left his/her country of residence because of persecution for belonging to a particular social, cultural, religious and/or national group, and/or for holding political beliefs and has been accepted for residence in Canada.

Persons with Disabilities: Persons with disabilities are those who would consider themselves disadvantaged by reason of any physical, intellectual, mental, sensory or learning impairment.

Gender and Sexual Minorities' group members: Persons who identify as Gay, Lesbian, Bi-Sexual, Trans-Gendered, Two-Spirited, Queer, Questioning, and/or Intersex.

These definitions are subject to change.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar.

Students may take the Pre-M.S.W. program on a part-time basis and the M.S.W. program on a full-time or part-time basis. There is a three year time limit to complete the Pre-M.S.W. program and a six year time limit to complete the M.S.W. program. There is no second language requirement.

### The Pre-M.S.W. Program

The Pre-M.S.W. program is designed to prepare students who do not have a B.S.W. degree from an accredited university, or its equivalent, for entry to the M.S.W. program. It is intended to build on the existing background and experience of students by providing them with an opportunity for focused study on Canadian social welfare policy, generalist social work practice, the philosophy and values of the profession of social work, including content on diversity and anti-oppression, and supervised practice in the field of social work.

### Program Requirements

SWRK 3100	Systematic Inquiry in Social Work	3
SWRK 4200	Field/Focus	6
SWRK 6020	Social Work Practice Seminar	6
SWRK 6030	Canadian Social Welfare Policy Analysis	6
SWRK 6040	Anti-Oppressive Social Work Practice	3
SWRK 6050	Field Practice	6
SWRK 6060	Social Work and Aboriginal People	3
	Maximum credit hours load	33

### Program Requirements



**The M.S.W. Program**

\*\*Available only to students admitted prior to 2004.

**The Social-Clinical Intervention Stream**

**The Social Services Administration Stream**

Students must complete 24 or 27 credit hours of seminar and tutorial work (Students opting for the "Course-Based Specialization Option" must complete 27 credit hours during their M.S.W. Program. All other students require 24 credit hours). The program requires at least 12-18 months of full-time study. Students may elect to take the program on a part-time basis.

Students must complete 24 or 27 credit hours of seminar and tutorial work (Students opting for the "Course-Based Specialization Option" must complete 27 credit hours during their M.S.W. Program. All other students require 24 credit hours). The program requires at least 12-18 months of full-time study. Students may elect to take the program on a part-time basis.

The program includes 15 credit hours of core material (which must be completed within 24 months from date of admission) and 9 credit hours of electives. In addition to the course work, students are required to complete a thesis, practicum or the course-based specialization option. Students admitted prior to 2004 may complete Option 1 (thesis); Option 2 (practicum) or Option 3 (course-based specialization). Those students admitted in 2004 or later may complete Option 1 (thesis) or Option 3 (course-based specialization).

The program includes 21 credit hours of required courses which must be completed within 24 months from date of admission. Students electing to study full-time may complete all 24 credit hours in one academic year. An addition to the course work, students are required to complete a thesis, practicum or the course-based specialization option. Students admitted prior to 2004 may complete Option 1 (thesis), Option 2 (practicum), or Option 3 (course-based specialization). Those students admitted in 2004 or later may complete Option 1 (thesis) or Option 3 (course-based specialization).

In addition to the one Advanced Social Work Practice Seminar required, students take nine hours of electives (up to six hours may be taken outside of the Social Work faculty).

**Social Services Administration Stream  
Core Courses and Electives**

Course SWRK 7290 is pre- or co-requisite to final approval of the proposal of the thesis, practicum or specialization course-based option.

SWRK 6010	Data Analysis for Social Work Research	3
	or	
SWRK 6070	Qualitative Research in Social Work	3
SWRK 7310	Social Service Administration Practice	6
SWRK 7400	Theoretical Foundations for Social Service	3

**Social-Clinical Intervention Stream**

SWRK 7420	Administration Theoretical Foundations of Social Policy Analysis,	3
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**Core Courses and Electives**

SWRK 6010	Data Analysis for Social Work Research	3
	or	
SWRK 6070	Qualitative Research in Social Work	3
SWRK 7290	Family-Focused Social Work Practice	6
SWRK 7300	Clinical Evaluation	3
SWRK 7390	Advanced Social Work Practice Seminar (Required elective-choose one from three offered)	3
	Electives*	9
	AND	
Option 1		
GRAD 7000	Thesis	0
Option 2		
GRAD 7030	Practicum**	0
Option 3		
	Course-Based Specialization Option	
SWRK 7180	Advanced Field Practice	0
SWRK 7190	Integrating Theory and Research in Advanced Field Practice	3

SWRK 7430	Planning and Evaluation Evaluation Research in Social Work Practice	3
SWRK 7440	Policy Analysis in Social Work Practice Electives*	3
	AND	
Option 1		
GRAD 7000	Thesis	0
Option 2		
GRAD 7030	Practicum**	0
Option 3		
	Course-Based Specialization Option	
SWRK 7180	Advanced Field Practice	0
SWRK 7190	Integrating Theory and Research in Advanced	3

**NOTE:**

Field Practice

**NOTE:**

\* Electives may be chosen from SWRK 7390 Advanced Social Work Practice Seminars, and/or SWRK 7230 Problem Seminars (which include a number of seminars on different areas of clinical practice), and/or SWRK 7220 Selected Topics in Social Work, and/ or SWRK 7280 Readings in Social Work and Social Welfare Research.

\* Students should take their elective course in Social Work or another department. Part-time students should take SWRK 7310 and SWRK 7400 together and SWRK 7420/ SWRK 7430/ SWRK 7440 in the same academic year.

\*\* Available only to students admitted prior to 2004.



### Ph.D. in Social Work ,

The PhD program is an advanced degree, focusing on developing skills for research and teaching. All students must master advanced skills in both quantitative and qualitative research methods. A full range of opportunities for study is available, and we particularly encourage research concerning Aboriginal people and women.

### Admission

In addition to the admission requirements of the Faculty of Graduate Studies, admission requirements to the doctoral program in Social Work include:

Master of Social Work degree, or equivalent, from an accredited degree-granting university, with a minimum 3.0 grade point average (as defined by the University of Manitoba). Equivalency to a M.S.W. degree from the University of Manitoba is defined as: possession of a M.S.W. degree from an accredited program at another accredited university OR possession of a Master's level degree other than a M.S.W. delivered by an academic unit with the mandate of preparing social workers for professional practice, accredited by the relevant social work education authority, and which would render its holders eligible for registration with the Manitoba Institute of Registered Social Workers.

Applicants who possess a B.S.W. degree and a non-social work Master's degree may be admitted to a qualifying year during which the student may be required to complete all or selected core courses of the M.S.W. stream consistent with the applicant's Ph.D. focus of study. Equivalency standing of prior courses will be assessed by a committee that includes representatives from the Ph.D. Admissions Committee and the M.S.W. stream consistent with the applicant's Ph.D. focus of study. Applicants holding a B.S.W. degree and a non-social work Master's degree are encouraged to apply at least one year prior to when they intend to enter the Ph.D. program.

Minimum research competency in qualitative or quantitative methods equivalent to the level required for the Master of Social Work degree from the University of Manitoba, with a minimum grade of 3.0 (B). Although the minimum requirement is for one course, applicants will be expected to have basic competency in both qualitative and quantitative methods.

Evidence of scholarly ability, through publications in refereed journals, other scholarly work of equivalent standard, or courses taught in accredited university programs must be provided.

A minimum of two years of professional practice experience in social work.

Admission is subject to the availability of an advisor with demonstrated scholarship in the applicant's proposed area of research.

### Advising

Each student is assigned an advisor on admission. An advisory committee that includes the advisor, one additional member from Social Work and one from another faculty will be appointed to assist the student in developing a study plan and to supervise the student's research. All members of the advisory committee must be members of the Faculty of Graduate Studies.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. A minimum of TWO YEARS of study (the fall and winter terms of the first and second year following admission) is required.

The program consists of: (a) 27 credit hours of coursework, (b) a candidacy examination, and (c) a Ph.D. thesis.

### Course Requirements

Students must complete 27 credit hours of approved coursework beyond the M.S.W. degree and will include:

Social Work core courses (6 credit hours): • SWRK 8010 - Perspectives on Knowledge for Social Work (3 credit hours) • SWRK 8020 - Development of the Social Work Profession (3 credit hours)

Research Courses (12 credit hours): • SWRK 8030 - Advanced Qualitative Research in Social Work (6 credit hours) • SWRK 8040 - Advanced Quantitative Research in Social Work (6 credit hours)

Teaching Requirement (3 credit hours): • Seminar in Post-Secondary Instruction (EDUB 7416) (3 credit hours) OR • an alternative requirement that addresses teaching (3 credit hours)

Electives (6 credit hours): • One elective in the student's area of specialization (3 credit hours) • One additional elective (3 credit hours)

### Candidacy

A candidacy examination committee will also be appointed when the student begins to prepare for the candidacy examination. This three-person committee, which includes the advisor, is responsible for administering the candidacy examination. The candidacy examination will normally be taken after completing all course work but in no case later than one year prior to expected graduation. The candidacy examination consists of a major paper on a topic within the student's general area of study and an oral examination of the topic covered in the paper.

### Dissertation Research



The student's Ph.D. advisory committee, chaired by a thesis advisor, provides advice and guidance in the development of the proposal for the dissertation, and during the ongoing research phase. Normally, advisory committee members become members of the examining committee for the dissertation during the final examination for the Ph.D. degree.

Second language requirement: none

Maximum time to graduation: seven years

### Social Work -6000 Level

**SWRK 6010** Data Analysis for Social Work Research Cr.Hrs.3

(Formerly 047.601) An intermediate course in the analysis of social work data. Course will emphasize application and interpretation of analytical techniques useful in the practice of social work. A course in elementary statistics such as STAT 2200 (or 005.220) is strongly recommended prior to taking this course. Prerequisite: SWRK 3100 (or 047.310) or equivalent. May not hold with SWRK 4110 (or 047.411).

**SWRK 6020** Social Work Practice Seminar Cr.Hrs.6 (Formerly 047.602) Introduces students to ecological and other generalist practice models in the provision of social services. Attention is given to key contextual aspects of social work practice such as gender, poverty, and culture in the study of professional roles and ethics. Intervention modalities considered range from direct practice with individuals to strategies of community change.

**SWRK 6030** Canadian Social Welfare Policy Cr.Hrs.6 (Formerly 047.603) An examination of the elements of ideology, and the application of competing ideological systems in the study of social welfare policy. This course also examines the history of Canadian social welfare from European contact to contemporary developments.

**SWRK 6040** Anti-Oppressive Social Work Practice Cr.Hrs.3 (Formerly 047.604) An Overview of Anti-Oppressive social work practice. Focuses on application of this approach to a wide variety of service participants and the connections between policy and practice. Implications for the profession are explored.

**SWRK 6050** Field Practice Cr.Hrs.6 (Formerly 047.605) An educationally focused practice experience where the student carries a sustained professional role as a beginning practitioner. Requires 450 hours of time including an orientation program, engagement in practicum activities under supervision, educational contact time with the field instructor and evaluation of performance. For Pre-MSW students only. Subject to satisfactory completion and reports, students will be graded on a pass/fail basis. Pre / Co requisite 47.602 Co-requisite 47.420

**SWRK 6060** Social Work and Aboriginal People Cr.Hrs.3 (Formerly 047.606) Focuses on the analysis of social welfare policy and social work practice from an Aboriginal perspective. The influence of colonization as an attribute of oppression is examined along with an exploration of

developments oriented to the goal of decolonization and empowerment.

**SWRK 6070** Qualitative Research in Social Work Cr.Hrs.3 An intermediate course in qualitative approaches for research on social work practice and social welfare issues. It will include some of the main approaches to the design and analysis of qualitative social work research.

### Social Work -7000 Level

**SWRK 7180** Advanced Field Practice Cr.Hrs.0 (Formerly 047.718) A student directed specialized practice experience where the focus is on the integration of theory, research and practice. Requires 450 hours of supervised, advanced practice following approval of a proposal developed by the student. Students will be graded on a pass/fail basis. Pre/Co Requisite SWRK 7190 (or 047.719)

**SWRK 7190** Integrating Theory and Research in Advanced Field Practice Cr.Hrs.3 (Formerly 047.719) Requires application of theory and research to analysis of selected activities undertaken in Advanced Field Practice (47.718) Pre/Co requisite SWRK 7180 (or 047.718)

**SWRK 7220** Selected Topics in Social Work Cr.Hrs.3 (Formerly 047.722) A tutorial approach which permits the graduate student to develop an area of concentration independently but with assistance and mutual work with a faculty member. Prerequisite: written permission of instructor.

**SWRK 7230** Problem Seminar Cr.Hrs.3 (Formerly 047.723) Students focus on the theory, social policy and social work practice implications of a given social problem area.

**SWRK 7280** Readings in Social Work and Social Welfare Research Cr.Hrs.3 A tutorial in specialized research methodology to be offered only to students who have highly specialized research interests which are not commonly offered in other courses. Prerequisite: an introductory research course and consent of the instructor.

**SWRK 7290** Change and Stability: Implications for Direct Intervention Cr.Hrs.6 (Formerly 047.729) Theories of human behaviour are considered from an ecological perspective as they relate to family focused social work practice. Intervention methods are studied with special attention given to developmental issues and social contextual factors in the assessment and treatment of distressed human systems.

**SWRK 7300** Clinical Evaluation of Social Work Interventions Cr.Hrs.3 (Formerly 047.730) Methods of evaluating clinical social work intervention with individuals, couples, families, and other small groups. Prerequisite: SWRK 3100 (or 047.310) or SWRK 4110 (or 047.411) or their equivalents.

**SWRK 7310** Social Service Administration Practice Cr.Hrs.6 (Formerly 047.731) This course will focus on the development of skills in the analysis and implementation of organizational models for social service delivery, and



administration methods for the effective delivery of social services. Students may not hold credit for SWRK 7310 (or 047.731) and the former 047.735 or SWRK 7360 (or 047.736).

**SWRK 7390** Advanced Social Work Practice Seminars Cr.Hrs.3  
(Formerly 047.739) Study of social work practice organized by size of client system. Students must select one seminar from several which are offered. Remaining seminars may fulfill elective requirements. For clinical students only Pre-corequisite: SWRK 7290 (or 047.729).

**SWRK 7400** Theoretical Foundations of Social Service Administration Cr.Hrs.3  
(Formerly 047.740) An examination of organizational theories and strategies and evaluation of their relevance for the administration of social services agencies.

**SWRK 7420** Theoretical Foundations of Social Policy Analysis, Planning and Evaluation Cr.Hrs.3  
(Formerly 047.742) An advanced course in the welfare state in Canada - the relationship between ideology, economics and the existing structure of the welfare state in Canada, with a focus on the attempts to roll it back and the consequent tasks of social work in the preservation and advancement of social security. Students may not hold credit for 047.737 and SWRK 7420 (or 047.742).

**SWRK 7430** Evaluation Research in Social Work Practice Cr.Hrs.3  
(Formerly 047.743) Presentation of the knowledge and skills necessary in the application of models and methods of planning and evaluating social policy and social programs. Analytical and practice skills are developed through a critical review of a variety of theories and techniques and case study applications. Pre-corequisite: SWRK 6010 (or 047.601). Applicable to students admitted subsequent to 1997-1998. May not hold with the former 047.741.

**SWRK 7440** Policy Analysis in Social Work Practice Cr.Hrs.3  
(Formerly 047.744) Presentation of the knowledge and skills necessary in the application of models and methods of planning social policy and social programs. Analytical and practice skills are developed through a critical review of a variety of theories and techniques and case study applications. Applicable to students admitted subsequent to 1997-1998. May not hold with SWRK 7410 (or 047.741).

**SWRK 7450** Advanced Research Methods 1 Cr.Hrs.3  
(Formerly 047.745) An overview of design and methodology options in quantitative and qualitative social work research, with special emphasis on practice in community settings.

**SWRK 7460** Advanced Research Methods 2 Cr.Hrs.3  
(Formerly 047.746) Advanced quantitative analysis of social work policy and practice, with emphasis on multivariate analysis techniques.

**SWRK 7470** Advanced Research Methods 3 Cr.Hrs.3  
(Formerly 047.747) Advanced qualitative analysis of social work policy and practice, with emphasis on analyzing appropriate case studies, and interview and documentary information.

**SWRK 7480** Advanced Family-Focused Practice Cr.Hrs.3  
(Formerly 047.748) Study of the family as a client system, using theoretical approaches within an ecological paradigm.

**SWRK 7490** Advanced Family-Focused Practice with Special Populations Cr.Hrs.3  
(Formerly 047.749) Special issues in family-focused practice, including supervision of practice.

**SWRK 7520** Dissertation Seminar Cr.Hrs.0  
(Formerly 047.752) A required non-credit course on special issues to support students in preparing their formal dissertation proposals. Topics include scholarly findings, research methodology, and data analysis. Graded as P/F.

**SWRK 7530** Critical Issues in Social Work Cr.Hrs.3  
(Formerly 047.753) An opportunity for students to engage in the study of a specific field or topic in social work. Taken as a course, tutorial or offered as a special Ph.D. seminar when numbers permit.

## Social Work -8000 Level

**SWRK 8010** Perspectives on Knowledge for Social Work Cr.Hrs.3  
A seminar focusing on the definition, development, legitimization, and transmission of knowledge for social work practice. A range of approaches will be discussed including scientific approaches (logical positivism), post-modern approaches, indigenous and culturally based approaches, and critical approaches.

**SWRK 8020** Development of the Social Work Profession Cr.Hrs.3  
A seminar focusing on the development of social work from mainstream and marginalized people's perspectives (including Aboriginal people and women), and its relationship; to current professional issues. Histories, ideological, economic, theoretical, and political factors will be considered in examining selected fields of practice.

**SWRK 8030** Advanced Qualitative Research in Social Work Cr.Hrs.6  
A seminar and laboratory course in the understanding and use of a wide range of epistemological and methodological approaches to research related to social work. This will include a focus on the views and practices of Aboriginal peoples, women, and other marginalized persons. Pre-requisite: A grade of "B" or better in a Master's level qualitative research course taken within five years or instructor approval.

**SWRK 8040** Advanced Quantitative Research in Social Work Cr.Hrs.6  
A seminar and laboratory course in the use of multivariate statistics in analyzing experimental, quasi-experimental, survey and administrative data related to social policy, social services, and social work practice. Pre-requisite: A grade of "B" or better in a Master's level quantitative research course taken within five years or instructor approval.

## Sociology

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The Department of Sociology offers programs at the Master and Ph.D. levels. Both programs provide training in the core areas of the discipline (theory and research methods) as well as in the department's major areas of specialization: crime, law, and social justice; culture and social relations; population health and wellness; power, privilege, and resistance; social development and social inequality; social policy and practice. The relatively low graduate student/faculty ratio creates an informal learning environment in which students receive considerable individual attention. Faculty members are actively involved in research, including some projects that readily lend themselves to the production of student theses/dissertations. Many students who have completed their Sociology degrees at the University of Manitoba have gone on to successful careers in the academic community, in the private sector, and in government service.

#### Fields of Research

The major areas of research of the Sociology faculty include criminology and criminal justice, health care, gender studies, inter-group (race/ethnic) relations, power and inequality, social change and development, and social psychology. Several department members have affiliations with research centres and institutes at the University of Manitoba, including the Centre on Aging, and RESOLVE (a centre for research and education for solutions to violence and abuse).

#### M.A. in Sociology, Admission

Admission requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students who have completed a University of Manitoba Honours B.A. (or equivalent) in Sociology may enter directly into the Master of Arts program. Students with other degrees or backgrounds may be eligible for admission to a pre-Master's program to the satisfaction of the department. Contact the Sociology Department for further information.

#### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and

supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. The Master of Arts program in Sociology requires 18 credit hours of course-work (7000 level) beyond the pre-Master's requirements. (Please see the "Graduate Study in Sociology" manual for more details on course requirements at [http://umanitoba.ca/faculties/arts/departments/sociology/media/Sociology\\_Graduate\\_Manual-Nov-2011\\_revised.pdf](http://umanitoba.ca/faculties/arts/departments/sociology/media/Sociology_Graduate_Manual-Nov-2011_revised.pdf)) Students must also complete and successfully defend a thesis.

Second Language Reading Requirement: None

Expected Time to Graduate: Two years

#### Ph.D. in Sociology, Admission

Admission requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students who wish to enter the Doctor of Philosophy program must have completed the equivalent of a University of Manitoba Master of Arts in Sociology.

#### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Department at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Department at least 7 months prior to their intended start date.

#### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students must complete:

- A minimum of 18 credit hours of coursework (including 3 credit hours in Theory and 6 credit hours in Research Methods);
- A passing grade in two comprehensive examinations in two different subject areas, chosen from the following: Classical Theory; Criminology; Gender, Sexuality and Family/Intimate Relations; Inequality and Social Transition; Research Methods; Social Psychology; Health.
- Successful defense of a dissertation proposal; and
- Successful defense of the completed dissertation.

Second language requirement: no



Expected time to graduate: four years

## Sociology

**SOC 7110** Seminar in Sociology of Religion Cr.Hrs.3  
(Formerly 077.711) A comparative and analytical study of religion with particular reference to such areas as integration, change, ideology, value orientation, normative structures, social class, intergroup relations, personality systems.

**SOC 7120** Seminar in Sociology of Education Cr.Hrs.3  
(Formerly 077.712) An analytical treatment of the influence of education, as a basic social institution, on society its functions in socialization, change, control, social mobility, social progress, etc. and the influence of society on the organization, content, and goals of education.

**SOC 7160** Selected Topics Cr.Hrs.3  
(Formerly 077.716) An intensive study of the contemporary research and theory in a selected field of sociology. As the course content will vary from year to year, students may take this course more than once for credit.

**SOC 7190** Seminar in Selected Topics in Sociological Theory Cr.Hrs.3  
(Formerly 077.719) The content of this course may vary from year to year, depending on interest and need. As the course content will vary from year to year, students may take this course more than once for credit.

**SOC 7240** Seminar in Selected Topics in Research and Methods Cr.Hrs.3  
(Formerly 077.724) The content of this course may vary from year to year, depending on interest and need. As the course content will vary from year to year, students may take this course more than once for credit.

**SOC 7280** Seminar in Theories of Criminal Behaviour Cr.Hrs.3  
(Formerly 077.728) An advanced course dealing with theory and research in the field of criminology with emphasis placed on an evaluation of existing theories of crime and criminal behaviour.

**SOC 7300** Seminar in the Sociology of Law and Social Control Cr.Hrs.3  
(Formerly 077.730) A critical examination of classical and contemporary sociological theories of law and social control and their import for understanding substantive issues relating to the law-society relationship.

**SOC 7310** Seminar in Intergroup Relations Cr.Hrs.3  
(Formerly 077.731) This seminar will provide an opportunity for detailed study of intergroup (religious, racial, and ethnic) relations in contemporary Canadian society. As the course content will vary from year to year, students may take this course more than once for credit.

**SOC 7320** Seminar in Political Sociology Cr.Hrs.3  
(Formerly 077.732) A critical examination of classical and contemporary sociological theories and current empirical research concerned with the relationship between politics and society. Particular emphasis is placed upon the origin,

development, nature and future of the welfare state from a comparative perspective.

**SOC 7340** Seminar in the Sociology of the Family Cr.Hrs.3  
(Formerly 077.734) This seminar investigates various conceptual frameworks which are developing in the study of the family today, including research problems and procedures unique to such study. Various approaches will be examined.

**SOC 7350** Advanced Reading and Research 1 Cr.Hrs.3  
(Formerly 077.735) Directed study of a selected area within the general field of sociology.

**SOC 7360** Advanced Reading and Research 2 Cr.Hrs.3  
(Formerly 077.736) Directed study of a selected area within the general field of sociology.

**SOC 7370** Issues in Health Care Seminar Cr.Hrs.3  
(Formerly 077.737) An advanced seminar designed to examine current issues in health care. The content of this course may vary from year to year depending on interest and need. Prerequisite: a grade of "C+" or better in SOC 4540 (or 077.454) or written consent of the department head.

**SOC 7390** Survey Research Methods Cr.Hrs.3  
(Formerly 077.739) Through the use of secondary electronic data sources, students learn all aspects of survey research. Topics covered include: sampling, question and questionnaire construction, index construction and scaling methods, techniques of establishing validity and reliability, order effects, conducting interviews, coding, data analysis, and budgeting. Previous experience with multivariate data analysis at the undergraduate level is strongly encouraged.

**SOC 7400** Advanced Quantitative Research Methods Cr.Hrs.3  
(Formerly 077.740) This course emphasizes the understanding and application of advanced quantitative data analysis techniques to sociological research problems. Issues in regression decomposition, path analysis, log-linear analysis, discriminant function analysis, principal components and factor analysis, as well as non-parametric statistical tests are covered as they relate to sociological research concerns. Statistical packages are used to illustrate sociological examples. Prerequisite: SOC 4480 (or 077.448) or written consent of the department head.

**SOC 7410** Selected Topics in Quantitative Research Methods Cr.Hrs.3  
(Formerly 077.741) This course emphasizes the understanding and application of selected quantitative data analysis procedures as they apply to sociological research concerns. Statistical packages are used to illustrate sociological applications. Topics covered will vary but may include logistic regression, multiple classification analysis, multivariate analysis of variance and covariance, canonical correlation, recursive and nonrecursive models, and LISREL. The course emphasizes issues related to the sociological use of these techniques. Prerequisite: SOC 4480 (or 077.448) or written consent of the department head. As the course content will vary from year to year, students may take this course more than once for credit.

**SOC 7420** Qualitative Research Methods Cr.Hrs.3  
(Formerly 077.742) This course provides an overview of the



methods of qualitative research. Discussion focuses on the philosophical foundations of qualitative methods, the variety of techniques available within interpretive and conflict paradigms, issues of sampling, analysis, validity, and report writing.

**SOC 7430** Seminar in Classical Sociological Theory Cr.Hrs.3

(Formerly 077.743) A critical examination of certain central aspects of the sociological tradition. The content of this course may vary from year to year depending on interest and need.

**SOC 7440** Seminar in Contemporary Sociological Theory Cr.Hrs.3

(Formerly 077.744) An examination of current trends in sociological theory. The content of this course may vary from year to year depending on interest and need.

**SOC 7450** Selected Topics in Criminology Cr.Hrs.3

(Formerly 077.745) An advanced seminar in a selected area of criminology. As the course content will vary from year to year, students may take this course more than once for credit.

**SOC 7470** Evaluating Social Programs Cr.Hrs.3

(Formerly 077.747) Designed as a course in applied sociology, students will review the models and methodologies used for evaluating social programs. The course will introduce the necessary conceptual and analytic tools to design and carry out program evaluations. Students may not hold credit for both SOC 7470 (or 077.747) and the former 077.733.

**SOC 7480** Social Inequality Cr.Hrs.3

(Formerly 077.748) A critical examination of classical and contemporary theories and current empirical research concerned with various dimensions of social inequality (such as class, gender and race) and social stratification from a comparative perspective.

**SOC 7490** Globalization Cr.Hrs.3

(Formerly 077.749) A sociological examination of the globalization of trade, production and finance, including the creation of multilateral trading blocs (e.g., APEC, EU, NAFTA) and international organizations (e.g., WTO, IMF, the World Bank) and their impact upon social inequality, the welfare state and the environment in developed and developing nations.

## Soil Science

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**Academic Staff:** Please refer to our website for Academic staff information: [http://umanitoba.ca/afs/soil\\_science](http://umanitoba.ca/afs/soil_science)

The Department of Soil Science offers graduate instruction leading to M.Sc. and Ph.D. degrees. Students will select one of the following four programs:

- Environmental Science
- Fundamental Soil Science
- Agricultural Science
- Agrometeorology

Studies related to these four programs include fundamental and applied studies on the management of soil resources for crop and animal production, soil fertility and nutrient management, pest control management, chemical use in agriculture and food quality, effects of weather and climate on agricultural production, soil erosion, tillage practices, precision agriculture, pesticide fate in the environment, environmental monitoring, manure and waste management, remediation of contaminated or degraded soils, land use suitability assessment, soil genesis and classification, soil mineralogy, soil microbiology and biochemistry, soil and pesticide chemistry, soil physics and agrometeorology.

Graduate students are required to obtain a comprehensive knowledge of soil science, but the department permits considerable variation in the selection of courses depending on the background of the student and the particular area of specialization. Graduates with knowledge or a major in soil science have had excellent career opportunities with agribusiness, environmental land use agencies or firms, and regulatory agencies. M.Sc. and Ph.D. graduates are employed in land inventory activities, research in the various areas of fundamental and applied soil science, environmental consulting and extension.

### Fields of Research

Research interests of academic staff in the Department of Soil Science includes transport and transformation of organic and inorganic chemicals in soil, agrometeorological modelling of crop and agricultural processes, impacts of climate change, soil ecology and biochemistry, agricultural pesticides and sustainable agriculture, soil fertility, soil chemistry and mineralogy, landscape ecology and land resource management, land remediation, manure management, greenhouse gas dynamics, forest fires, nutrient dynamics and chemistry of soil fertility.

### Research Facilities

The Department of Soil Science and its research facilities are located in the Ellis Building. Facilities within the department include excellent instrumentation to measure soil physical, chemical and biological characteristics, and to quantify soil nutrient and pesticide residue levels in soil extracts and water samples. The department conducts field-based research at a number of locations, both in the province and beyond, in collaboration with scientists from other universities and federal and provincial organizations. Within the department, full-time technicians add quality assurance and quality control to the research programs, and provide a positive effect on the training of students. In addition, the department has the opportunity to share



research facilities with other departments within the university and at several locations throughout the province.

### M.Sc. in Soil Science Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

### Application Deadlines

Start Date	Canadian/U.S.	Non-Canadian/U.S.
September	June 1	March 1
January	October 1	July 1
May	February 1	November 1
July	April 1	January 1

### Program Requirements

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, a "B" is the minimum passing grade in the major subject area.

Second language reading requirement: none

Expected time to graduation: two years

### Ph.D. in Soil Science Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar.

### Application Deadlines

Start Date	Canadian/U.S.	Non-Canadian/U.S.
September	June 1	March 1
January	October 1	July 1
May	February 1	November 1
July	April 1	January 1

### Program Requirements

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar, a "B" is the minimum passing grade in the major subject area.

Second language reading requirement: none

Expected time to graduation: three years

Graduate Studies

### Soil Science

#### SOIL 7100 Soil Physical Chemistry Cr.Hrs.3

(Formerly 040.710) Topics of discussion: ionic equilibria, ion exchange and ionic transport including soil-plant relationships. Offered in 2005-2006 and alternate years.

#### SOIL 7110 Soil Physics I - General Cr.Hrs.3

(Formerly 040.711) First and second laws of thermodynamics, Darcy's law, saturated and unsaturated flow, simulation modeling of moisture movement, soil aeration, water availability to seeds, strength properties of unsaturated soils. Offered in 2006-2007 and alternate years.

#### SOIL 7120 Soil Physics II Special Problems Cr.Hrs.3

(Formerly 040.712) Each student will be required to prepare a comprehensive review of literature on an assigned topic and present a seminar. In addition, each student will conduct a minor research project and submit a written report on the project. Currently not offered.

#### SOIL 7130 Soil Chemistry Cr.Hrs.3

(Formerly 040.713) Chemical equilibria and soil solution chemistry; surface chemistry and solid-solution reactions; mineral structure, colloid chemistry and analytical techniques; fate of nutrients and pollutants; reactions of fertilizers. Offered in 2005-2006 and alternate years.

#### SOIL 7140 Soil Nitrogen Cr.Hrs.3

(Formerly 040.714) Discussion of organic and inorganic nitrogen in soils, nitrogen fixation, mineralization, nitrification, denitrification, and plant availability of soil nitrogen. Students will be required to review literature on assigned topics. Offered in 2005-2006 and alternate years.

#### SOIL 7170 Agricultural Micrometeorology Cr.Hrs.3

(Formerly 040.717) Discussion of mass and energy transport in the boundary layer, evaporation and transpiration of water, light absorption and transmission of carbon dioxide in plant canopies and climate change impacts on micrometeorological processes. Prerequisite: SOIL 3060 (or 040.306) and/or consent of instructor. Offered in 2006-2007 and alternate years.

#### SOIL 7180 Environmental Chemistry of Pesticides and Related Compounds Cr.Hrs.3

(Formerly 040.718) Pesticide chemodynamics, biological and non-biological transformations of pesticides in water, soil and biota, bioaccumulation and food chain distribution of pesticides and related xenobiotics and environmental fate models will be discussed. Prerequisite: SOIL 7150 (or 040.715) or consent of instructor. Not offered in 2005-2006.

#### SOIL 7200 Advanced Soil Microbiology Cr.Hrs.3

(Formerly 040.720) Examines the role of the microbial community in decomposition, nutrient cycling, and pathogen/pest suppression. Methods of studying biochemical activity and microbial composition of soil are discussed. The soil environment and agricultural management are considered and to their role in regulating the composition and activity of microbial communities. Prerequisite: SOIL 4120 (or 040.412) or consent of instructor. Offered in 2005-2006 and alternate years.

**SOIL 7202** Advanced Soil Ecology Cr.Hrs.3

Examine the role of soil organisms and their communities in decomposition, elemental cycling, and pathogen/pest suppression in managed and natural soil systems. Understand methods of studying biochemical activity and communities in soil. Take a specific research topic of choice and develop an understanding of the organisms and communities, environmental controls of key biological processes involved and apply your knowledge to resolving a specific research issue.

**SOIL 7210** Topics in Soil Fertility Cr.Hrs.3

(Formerly 040.721) Advanced study of behaviour and crop requirements for selected nutrients (except for nitrogen, as covered in SOIL 7140 (or 040.714)). Students will be required to review literature and prepare seminars on assigned topics. Prerequisites: SOIL 4520 (or 040.452) or consent of instructor. Offered in 2006-2007 and alternate years.

**SOIL 7220** Principles of Scientific Research and Communication Cr.Hrs.3

(Formerly 040.722) Principles of scientific research; management skills; writing skills; oral and poster presentation; preparation of research proposal and thesis (pass/fail). These topics will focus on aspects of soil science and will give students experience in writing and presenting scientific material to increase their professionalism as soil scientists. Prerequisite: Consent of instructor.

**SOIL 7230** Topics in Landscape and Processes I Cr.Hrs.3

(Formerly 040.723) An examination of methods of landscape characterization and of landscape processes, their impacts, interactions and modelling. Prerequisite: Consent of instructor. Not offered in 2005-2006.

**SOIL 7240** Topics in Landscape Processes II Cr.Hrs.3

(Formerly 040.724) A continuation of SOIL 7230 (or 040.723). Prerequisite: Consent of instructor. Not offered in 2005-2006.

**SOIL 7250** Topics in Soil Science Cr.Hrs.3

(Formerly 040.725) Several courses in soil science are sectioned into modules. Modules of one credit hour on special topics are also available. Students may select three modules from the various courses or from special topics for SOIL 7250.

**SOIL 7260** Pesticide Residues in Food, Water and Soil Cr.Hrs.3

(Formerly 040.726) Discussion and application of research protocols for examining pesticide fate in the environment and for quantifying pesticide residues in food, water and soil. Prerequisite: consent of instructor. Currently not offered.

**SOIL 7270** Advanced Soil Ecology Cr.Hrs.3

Examine the role of soil organisms and their communities in decomposition, elemental cycling, and pathogen/pest suppression in managed and natural soil systems. Understand methods of studying biochemical activity and communities in soil. Take a specific research topic of choice and develop an understanding of the organisms and communities, environmental controls of key biological processes involved and apply your knowledge to resolving a specific research issue.

## Statistics

**Head:** Dr. Xikui Wang

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**Website:** <http://umanitoba.ca/statistics>

**Academic Staff:** Please refer to our website for Academic staff information: <http://umanitoba.ca/statistics>

The University of Manitoba offers graduate programs in statistics leading to the M.Sc. and Ph.D. degrees as well as a B.Sc. in Statistics degree. Applications are encouraged from students with strong interest in statistics, mathematics or related fields.

### Fields of Research

Areas of research interest in the department include: Bayesian statistics; biostatistics; clinical trials; computational statistics; decision theory; distribution theory of runs and patterns; econometrics; environmental statistics; errors-in-variables models; experimental design; image processing; nonparametric statistics; order statistics; probability; quality control; reliability theory; statistical inference; stochastic processes; survival analysis; and time series.

### Research Facilities

In addition to the vast network of computing facilities maintained by Computer Services at the University of Manitoba, the Department of Statistics maintains two smaller networks for use by their students. The graduate computing laboratory consists of iMac computers which are capable of running both OS X and Windows, and one IBM Intellistation running Ubuntu Linux. All of the computers in both the undergraduate and graduate labs are also available as a clustered computing resource with an aggregate 180 GHz processing speed and over 150 Gb of RAM.

### M.Sc. in Statistics Admission

For September admission, the Department of Statistics begins the application review process in early February. To be considered in the initial review process, all application materials, including letters of reference and transcripts, should be received before February 1st. Applications received after this date will still be considered for admission depending on the number of spaces available for the Fall term. While applications after February 1st will still be considered for admission, they may not be considered for funding.

Students should also be aware of deadlines imposed by the Faculty of Graduate Studies. The Faculty of Graduate Studies requires that Canadian/U.S. submit their application



and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Department at least 7 months prior to their intended start date.

### Application Deadlines

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 7 months prior to their intended start date.

### Program Requirements

The Master's degree may be earned in one of three ways:

- Submission of a thesis; at least nine credit hours of approved work at the 7000 level in statistics, which must include STAT 7080, STAT 7140 and the zero credit hour STAT 7310; and six credit hours of approved coursework at the 4000 or 7000 level in Statistics.
- Submission of a practicum; at least nine credit hours of coursework at the 7000 level, which must include STAT 7080, STAT 7140, STAT 7290 and the zero credit hour STAT 7310; and six credit hours of approved work at the 4000 or 7000 level in Statistics.
- Eighteen credit hours of course work at the 7000 level, which must include STAT 7080, STAT 7140, the zero credit hour STAT 7310 and the research project course STAT 7320; and six credit hours of approved coursework at the 4000 or 7000 level in Statistics.

Students are also expected to take part in laboratory instruction.

Second language reading requirement: none

Expected time to graduate: one to two years depending on the option selected

### Ph.D. in Statistics Admission

Admission requirements are those of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this Calendar. Completion of a Master's degree in Statistics is usually required for admission to the Ph.D. program.

### Application Deadlines

For September admission, the Department of Statistics begins the application review process in early February. To

be considered in the initial review process, all application materials, including letters of reference and transcripts, should be received before February 1st. Applications received after this date will still be considered for admission depending on the number of spaces available for the Fall term. While applications after February 1st will still be considered for admission, they may not be considered for funding.

Students should also be aware of deadlines imposed by the Faculty of Graduate Studies. The Faculty of Graduate Studies requires that Canadian/U.S. submit their application and supporting documentation to the Faculty of Graduate Studies at least 3 months prior to their intended start date. International students should submit their application and supporting documentation to the Department at least 7 months prior to their intended start date.

### Program Requirements

Minimum program requirements of the Faculty of Graduate Studies are found in the Graduate Studies Regulations Section of this Calendar. Students are required to satisfy the following requirements:

- Candidates are required to attempt and successfully complete at least twelve credit hours at the 7000 level. These courses will normally be taken from the Department of Statistics. Courses will normally be recommended by the candidate's supervisor.
- Candidates are required to pass the Ph.D. qualifying examination within eighteen months of first registration.
- Candidates are required to pass a candidacy examination, which will normally be administered twelve months prior to the completion of all degree requirements. The candidacy examination will be set and administered by the candidate's Ph.D. advisory committee. The format may vary.

Second language requirement: none

Thesis: required

Expected time to graduation: five years

### Statistics

**STAT 7060** Advanced Theory of Probability Cr.Hrs.3 (Formerly 005.706) Probability as measure, convolutions, limit laws, conditional probability and expectation, law of large numbers and other selected topics. Prerequisite: consent of instructor.

**STAT 7070** STOCHASTIC PROC Cr.Hrs.3  
s

**STAT 7080** Advanced Statistical Inference Cr.Hrs.3 (Formerly 005.708) Selected topics from recent developments in parametric and/or non-parametric statistical



inference. Prerequisite: consent of instructor.

**STAT 7090** Advanced Statistical Analysis Cr.Hrs.3  
(Formerly 005.709) Construction of regression models, response surfaces, nonlinear model ANOVA as regression model, variance components, and selected topics. Prerequisite: consent of instructor.

**STAT 7100** Analysis of Discrete Data Cr.Hrs.3  
(Formerly 005.710) Inference concerning discrete distributions, analysis of categorical data, and other selected topics. Prerequisite: consent of instructor.

**STAT 7120** Nonparametric Inference Cr.Hrs.3  
(Formerly 005.712) Order statistics, Kolmogorov-Smirnov tests, Wilcoxon-Mann-Whitney tests, and other selected topics. Prerequisite: consent of instructor.

**STAT 7140** Linear Models Cr.Hrs.3  
(Formerly 005.714) Theory of linear models, regression analysis, and analysis of variance. Prerequisite: consent of instructor.

**STAT 7200** Multivariate Analysis 1 Cr.Hrs.3  
(Formerly 005.720) Multivariate normal distribution, Hotelling's T<sup>2</sup>, Classification methods, principal components and canonical correlations. Prerequisite: consent of instructor.

**STAT 7210** Multivariate Analysis 2 Cr.Hrs.3  
(Formerly 005.721) Advanced topics in multivariate analysis. Prerequisite: STAT 7200 (or 005.720) or consent of instructor.

**STAT 7220** Seminar in Statistics 1 Cr.Hrs.3  
(Formerly 005.722) A seminar course on new development in statistics.

**STAT 7240** Advanced Topics in Statistics 1 Cr.Hrs.3  
(Formerly 005.724) Special advanced research topics in statistics.

**STAT 7250** Advanced Topics in Statistics 2 Cr.Hrs.3  
(Formerly 005.725) Special advanced research topics in statistics.

**STAT 7260** Time Series Cr.Hrs.3  
(Formerly 005.726) The auto-correlation function and spectrum, various processes, model identification, estimation and forecasting. Prerequisite: consent of instructor.

**STAT 7270** Bayesian Inference Cr.Hrs.3  
(Formerly 005.727) Bayesian decision problems, priors, Jeffrey's Rule, robustness of posteriors, Bayesian justification of ANOVA. Prerequisite: consent of instructor.

**STAT 7290** Statistical Consulting Cr.Hrs.3  
(Formerly 005.729) The role of a statistics consultant. Practical consulting experience. Prerequisite: consent of department.

**STAT 7310** Research Tools for Statistics Cr.Hrs.0  
This course provides instruction in the use of a number of tools required for graduate level research in statistics. Topics include instruction in various software, such as LaTeX, R, SAS, etc. as well as Library usage, presentation and

communication skills.

**STAT 7320** Research Project in Statistics Cr.Hrs.3  
This course will provide the student with practical experience in doing research in the statistical sciences. Students will be matched with a faculty advisor and carry out a research project. Deliverables include a final research report and a presentation to the department.

**STAT 7350** Advanced Topics in Statistics 3 Cr.Hrs.1.5  
Special advanced research topics in statistics.

**STAT 7360** Advanced Topics in Statistics 4 Cr.Hrs.1.5  
Special advanced research topics in statistics.

## Surgery

**Head:** Richard Nason

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**Website:** [umanitoba.ca/faculties/medicine/units/surgery/](http://umanitoba.ca/faculties/medicine/units/surgery/)

**Academic Staff:** Please refer to our website for Academic staff information: [umanitoba.ca/faculties/medicine/units/surgery/](http://umanitoba.ca/faculties/medicine/units/surgery/)

Through the Thesis Stream, the program is designed to grant surgical residents a year free of clinical duties to work on a research project of their own design or undertake the investigative role in a laboratory setting under the advisement of a senior investigator / thesis advisor.

The purpose of the program is to encourage the development of surgical clinician scientists, who will become the academic leaders of Surgery in the future. Many recent MSc recipients have gone on to careers in academic surgery or are still undertaking fellowship training with plans to assume an academic career in Surgery.

### Fields of Research

The research interests of the Department reflect the diversity of the clinical specialties contained therein. These specialties comprise of: Cardiac Surgery, General Surgery, Neurosurgery, Orthopedic Surgery, Plastic Surgery, Thoracic Surgery, Urology and Vascular Surgery.

### Research Facilities

Research occurs within facilities provided by the advisor. Such individuals are University of Manitoba faculty and generally have research facilities located at the Health Sciences Centre, University of Manitoba - Bannatyne Campus or the St. Boniface General Hospital Research Centre.



### M.Sc. in Surgery, Admission

In addition to the admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this *Calendar*, this program is **only** open to holders of an M.D. degree who are currently enrolled in a postgraduate residency program in the Faculty of Medicine at the University of Manitoba or holders of a D.M.D degree who are currently enrolled in the Faculty of Dentistry at the University of Manitoba. Applicants must include a copy of their current CV; research project proposal and a letter from their Thesis Advisor. An appointment with the Department of Surgery Research Chair to review the application and required documentation must be made prior to approval to proceed with an admissions application to the Faculty of Graduate Studies.

Candidates incorporate this program as part of their residency training, qualifying for both.

### Program Requirements

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this *Calendar*, students must complete:

Twelve months' work of research, under the supervision of the senior investigator or thesis advisor and the Research Chair for the Department of Surgery;

Submission of a major thesis on the research project;

Demonstration to an examining committee of satisfactory theses and an adequate knowledge of the subject involved.

Two fields of study must be chosen for the M.Sc. degree: one as a major and the other as an ancillary study. Major studies must be taken in any surgical problem, while the ancillary study should be selected from some related field (e.g., pathology, physiology, biochemistry).

Second language reading requirement: none

Expected time to graduate: one year

### Ph.D. in Surgery,

Surgery does not offer a Ph.D. program.

### Surgery

**SURG 7010** Surgery: Major course in Surgical Problems Cr.Hrs.6  
(Formerly 094.701) Description not available for this course.

**SURG 7020** Surgery Cr.Hrs.6  
(Formerly 094.702) Description not available for this course.

**SURG 7030** Advanced Surgery Cr.Hrs.3  
(Formerly 094.703) Description not available for this course.

**SURG 7040** Surgical Epidemiology and Biostatistics Cr.Hrs.3  
(Formerly 094.704) Prepare students to design studies suitable for a wide variety of research questions including diagnostic, etiologic and prognostic, and treatment outcomes, with focus on surgical issues. It should also provide the students with the essential biostatistical and epidemiologic tools to critique medical literature. The evaluation will be based on submission of a complete proposal to answer a research question of each student's choice.

## Textile Sciences

**Head:** (Acting) Tammi S. Feltham

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**Email Address:** [textile\\_sciences@umanitoba.ca](mailto:textile_sciences@umanitoba.ca)

### Website:

[http://umanitoba.ca/faculties/human\\_ecology/departments/ts/index.html](http://umanitoba.ca/faculties/human_ecology/departments/ts/index.html)

**Academic Staff:** Please refer to our website for Academic staff information: [http://umanitoba.ca/faculties/human\\_ecology/departments/ts/index.html](http://umanitoba.ca/faculties/human_ecology/departments/ts/index.html)

The Textile Sciences graduate program offers opportunities for in-depth study and technical and social dimensions of textile product development. The technical dimension includes research in the physical and chemical properties of textiles, and polymer science. The social dimension includes research in consumer behaviour toward textiles or textile products and marketing of textiles or textile products. The program comprises course work and a thesis.

Graduates from the program have found challenging careers in diverse fields. These include: technical product developer for medical/healthcare, industrial, and exercise and sports end uses, textile testing in industry or government research laboratories, post-secondary education, quality assurance, or a stepping stone to a Ph.D. degree.

### Fields of Research

Faculty members are currently involved in research projects in many areas of the field. Research interests of faculty include: attitudes, values and interests of selected groups toward clothing, organizational and consumer decision-making for textile products, application of theories in consumer behaviour, marketing and economics to clothing-related phenomena, clothing for older adults, communication of apparel information to older consumers, textile product



development, bio-protective textiles, sensory, physical, and chemical attributes related to the selection and performance of textile products, and skin/fabric interactions and their impact on clothing comfort and skin lesions.

### Research Facilities

The department has well equipped laboratories for the study of textiles and textile products. Space and equipment are available for chemical, physical, microscopic and sensory investigations of textiles, for polymer synthesis and textile surface modification, for textile product development research, and for the study of consumer behaviour toward textile products. Special equipment includes an Instron tensile tester, an Atlas Fade-Ometer, a Nicolet iS10 FTIR spectroscopy, a Hunterlab colorimeter, a KES-SE Frictional Analyzer, a Porosimeter, a Tensiometer, a Electrospinner and a range of flammability, thermal comfort testers. A computer-aided design laboratory houses computers equipped with an industry-standard software system for textile product development. Campus facilities contribute to a quality environment for research. Students in the department have access to the special facilities and equipment of both the Departments of Family Social Sciences and Human Nutritional Sciences. The University of Manitoba libraries system holds major volumes of English-language periodicals in textile sciences and ancillary areas. Internet access is available throughout the Human Ecology Building. The University has numerous research institutes of potential relevance to the textile sciences graduate students. The Department of Textile Sciences maintains close relationships with the textile and related industries in Manitoba. Faculty are members of national or international organizations such as the Institute of Textile Science, the American Association of Textile Chemists and Colorists, the American Society for Testing and Materials, the American Chemical Society, the Administrative Sciences Association of Canada, The Academy of Marketing Science and The Association for Consumer Research.

### Ph.D. in Textile Sciences,

The Department of Textile Sciences does not offer a Ph.D. program.

### Textile Sciences

**TXSC 7042** Preparations for Research in Textile Sciences Cr.Hrs.6

The course helps students develop the essential skill set to complete an academic research proposal. By integrating literature review and research methods, students will know how to seek, retrieve, critically assess and use information to develop a research topic, to formulate questions, and to make defensible methodological and data analysis decisions.

**TXSC 7120** Topics in Textile and Apparel Marketing Cr.Hrs.3

(Formerly 064.712) A critical examination of practices in the production, distribution, and consumption of textiles and apparel.

**TXSC 7162** Topics in Textile Sciences - Physical Properties Cr.Hrs.3

An in-depth study of the properties of fibers, yarns, fabrics, finishes and fabric assemblies using quantitative physical and sensory laboratory techniques.

**TXSC 7164** Topics in Textile Sciences - Chemical Properties Cr.Hrs.3

An in-depth study of the properties of textiles of modern and historic origin using qualitative and quantitative chemical and microscopic laboratory techniques.

**TXSC 7166** Seminar in Textile Sciences Cr.Hrs.3

Critical study of development in selective areas of textiles and/or clothing with emphasis on recent research findings.

**TXSC 7168** Problems in Textile Sciences Cr.Hrs.3

this course covers advanced problems in one or more of the following areas: chemical, physical, or biological properties and/or structure of textile materials; physiological aspects of textiles; consumer behaviour or marketing.

## Awards Information

The following awards are offered through the Faculty of Graduate Studies, which lists the value and deadline to submit applications. A complete listing of awards is on the web: [http://umanitoba.ca/graduate\\_studies/awards](http://umanitoba.ca/graduate_studies/awards)

Please note that awards information is subject to changes. The most up to date information can be found on our website.

**(CIHR) Canadian Institutes of Health Research**  
([www.cihr.ca](http://www.cihr.ca))

\$ 17,500 CGS Master's

Consult department/unit for their deadline in November

**(NSERC) Natural Sciences and Engineering Research Council** ([www.nserc.ca](http://www.nserc.ca))

### Doctoral Prize

\$10,000 plus a framed citation and a silver medal

Consult department for departmental deadline in September

### Postgraduate Scholarship (PGS)

\$17,300 Master's (PGS M)

\$21,000 Ph.D. (PGS D)

### Canada Graduate Scholarship (CGS)

\$17,500 Masters (CGSM)



\$35,000 Doctoral (CGSD)

Consult department for departmental deadline in September

#### Industrial Postgraduate Scholarship

No Deadline to apply.

**(SSHRC) Social Sciences and Humanities Research Council** ([www.sshrc.ca](http://www.sshrc.ca))

\$17,500 Master's

\$20,000 Ph.D.

\$35,000 CGS Doctoral

Consult department/unit for their specific deadline in October

#### Vanier Canada Graduate Scholarships

<http://www.vanier.gc.ca/hp-pa-eng.shtml>

\$50,000 Ph.D.

Deadline to be determined. Please check with Awards Office for details.

**Trudeau Scholars Programme**  
([www.trudeaufoundation.ca](http://www.trudeaufoundation.ca))

\$35,000 Ph.D. Mid November

#### Manitoba Graduate Scholarship

\$15,000 for Master's

\$7,500 for PhD (Top up to UMGF)

Students must apply for the UMGF to be considered for the Manitoba Graduate Scholarship

#### University of Manitoba Graduate Fellowship

\$12,000 for Master's

\$16,000 for Ph.D.

Consult department/unit for their specific deadline in December

## Registration Information

### SECTION 1: Information for All Graduate Students

Important Notice Regarding Graduate Fees, Registration is not complete until fee payment or fee payment arrangements are made with the Financial Services Office in writing. Do not wait for a fee statement to be mailed to you. Students are urged to check the section: "Fees, Payments and Refunds" found in this *Guide* and/or the graduate fee information which can be accessed at the following website: <http://umanitoba.ca/student/records/fees>

#### Registration Reminders

Have you:

- Submitted your Progress Report form?
- Met with your advisor or department for program approvals?
- Accessed Aurora Student to check for any timetable updates?
- Accessed Aurora Student to register for your courses?
- Accessed Aurora Student for a fee assessment?
- Paid your fees?

Welcome to the Faculty of Graduate Studies, Whether you are a new or returning graduate student, we hope you will familiarize yourself, not only with the information contained in this publication. Remember you are registering in a professional program leading to or supporting your career choice. Registering for courses that meet your department or your advisor's approval is your responsibility. However, your department office will be able to help you if you encounter difficulties in selecting or registering for courses.

#### Re-Registration Deadline

• All returning graduate students who intend to continue in their programs **must re-register and pay fees before September 8.**

• Any student whose program of study extends over more than one year **must re-register for September and January of each succeeding year of their program until a degree is obtained.**

Students who do not re-register in time will be subject to being "Discontinued" from their graduate programs. Students who have registered but have not paid in time will be subject to late fee payment or cancellation and discontinuation after this date.



### Returning Students Progress Report

The Progress Report for graduate students in thesis/practicum project programs *must* be submitted to the Faculty of Graduate Studies at least prior to registration. Failure to submit this report will result in registration access being denied.

### Initial Access Times

Access to registration times can be found in your Aurora Student account. Simply log in to Aurora Student, select Enrolment & Academic Records, select Registration, and then Registration Time and Status in order to view your access times for a given term.

### 1.1 Admission and Registration,

Admission and registration in the Faculty of Graduate Studies is by recommendation from a unit/department offering graduate programs. Students are admitted and register in the following categories: Occasional, pre-Master's, Diploma, Master's or Ph.D. and normally may commence study in September, January or Summer Session.

Students are responsible for meeting the requirements of the program and ensuring they have the prerequisites for the individual courses for which they register. Reference should be made to the current *Graduate Calendar* for detailed regulations and procedures of the Faculty.

Students whose program of study extends over more than one year must re-register each year until the degree is awarded. Students who fail to re-register do not retain the status of graduate student and must apply for readmission. See above for re-registration deadline.

Undergraduate students are not allowed to register in graduate courses; that is, admission to the Faculty of Graduate Studies is a condition for registration in courses at the 6000 level and above.

Students wishing to register for courses that are offered by a department/unit outside their major department/unit must get the approval of the offering department.

### 1.2 Student Status,

A student is considered to be full-time if the student is planning to carry the normal academic load of the department during the registration period. Graduate students who do not meet the criteria specified for full-time students should complete the form "Request for Part Time Status."

This form must be approved by the department head and advisor and submitted to the Faculty of Graduate Studies prior to registration.

### 1.3 Course Numbers for Graduate Studies, Registration for Thesis/Practicum or Comprehensive Examinations:

Students who intend to graduate in the coming year (February, May or October) must register for their thesis, practicum or comprehensive examination requirement. Therefore, you *may* need to register for one of the following:

#### GRAD 6000 Summer Research

Only for those students commencing their programs in May or July when courses may not be available.

#### GRAD 6100 Visiting Canadian Student Research Course

To formalize the status of visiting Canadian Graduate Student Researchers. Students must meet the terms of the Canadian Graduate Student Research Mobility Agreement (CGSRMA), and submit the Visiting Graduate Student Research Authorization form to be eligible to register.

#### GRAD 7000 Master's Thesis

- fall term  
(graduation in February or working on thesis during fall term only)

- fall & winter terms  
(graduation in May or working on thesis during fall & winter terms)

- winter term  
(graduation in May or working on of thesis during winter term only)

#### GRAD 7010 Master's Comprehensive Examination

- fall term (graduation in February or preparing for comprehensive exam during fall term only)

- fall & winter terms (graduation in May or preparing for comprehensive exam during fall & winter terms)

- winter term (graduation in May or preparing for comprehensive exam in winter term only)

#### GRAD 7020 Master's Re-registration\*\*

#### GRAD 7022 Master's Re-registration

MBA and MPA students who are not registering for any courses in Fall and/or Winter terms must register in this course to retain status.

#### GRAD 7030 Master's Practicum



-fall term  
(graduation in February or working on practicum during fall term only)

-fall & winter terms  
(graduation in May or working on practicum during fall & winter terms)

-winter term (graduation in May or working on practicum during winter term only)

**GRAD 7040 M.Eng. Project and Report (3)**

**GRAD 7050 M.Eng. Project and Report (6)**

**GRAD 7060 Diploma Re-registration\*\***

**GRAD 7090 Design Thesis**

- fall term  
(graduation in February or working on thesis during fall term only)

- fall & winter terms  
(graduation in May or working on thesis during fall & winter terms)

- winter term  
(graduation in May or working on of thesis during winter term only)

**GRAD 7200 MFA Thesis/Studio Exhibition**

**GRAD 8000 Ph.D. Thesis**

- fall term  
(graduation in February or working on thesis during fall term only)

- fall & winter terms  
(graduation in May or working on thesis during fall & winter terms)

- winter term  
(graduation in May or working on of thesis during winter term only)

**GRAD 8010 Ph.D. Candidacy Examination**

**GRAD 8020 Ph.D. Re-registration \*\***

**NOTE:**

\*\* The most efficient way to ensure that you are registered in order to retain status is to register for the "Re-Registration" course. Re-registration numbers are used by those students who are re-registering to retain status only - when not taking

any courses or working on thesis/ practicum or comprehensive examination.

"Master's re-registration"

GRAD 7020 A02 (spanned course – both Fall and Winter term)

or

"Ph.D. re-registration"

GRAD 8020 A02 (spanned course – both Fall and Winter term)

**Language Reading Tests**

FREN 6000 French	FREN 6010 Spanish
FREN 6030 Italian	LATN 6000
GRMN 6000 German	
RUSN 6000 Russian	

**1.4 Course Classifications,**

Students are responsible for determining the correct course classifications, sections and slots in consultation with their Department. Courses with the X, A, or O status must be added to a student's registration by the department, i.e., this cannot be achieved through Aurora Student.

- O Occasional Course is not part of the program and not included in the GPA (Additional fees will be assessed)
- X Auxiliary Course is not major requirement of the program but specified as necessary and required by the student's advisor or advisory committee and not included in the GPA.
- A Audit Course is not part of program, credit is not granted and grade will not be assigned. (Additional fees will be assessed)

**1.5 Voluntary Withdrawal Dates,**

Graduate Students are not allowed to withdraw from courses without permission from their department head on recommendation from their advisor/advisory committee giving approval to the program change.

For further information, contact your home Department or the Faculty of Graduate Studies  
(204) 474 9377, 500 University Centre.

**Website:** [http://umanitoba.ca/graduate\\_studies](http://umanitoba.ca/graduate_studies)

**E-Mail:** [graduate\\_studies@umanitoba.ca](mailto:graduate_studies@umanitoba.ca)



## SECTION 2: Departmental Information for Aurora Student

For general information on Aurora Student, refer to the Registration Information section of this Guide. Graduate Students in the **following programs/units** must contact their respective units to register: **Law, I.A. Asper School of Business, Individual Interdisciplinary Programs, St. Boniface College (Education and Canadian Studies), Ph.D. in Foods & Nutritional Sciences.** (Note: registration forms will not be mailed to students. The form can be accessed at the following Graduate Studies website: [http://umanitoba.ca/graduate\\_studies/forms/](http://umanitoba.ca/graduate_studies/forms/))

### 2.1 Faculty of Agricultural and Food Sciences Agribusiness and Agricultural Economics

New and returning students must meet with their program advisor to determine courses prior to registration. Courses must be listed on the departmental approval form available from the Graduate Studies Assistant, 352 Agriculture, and written approval granted from both the advisor and the department head or designate. Students may only register for courses listed and approved at that time. Any course revisions (additions and/or withdrawals) must be approved in the same manner. The signed form must be submitted to Judy Powell, who will then complete the registration process.

Not all courses are offered each year.

#### Registration and program enquiries:

Judy Powell, 352 Agriculture Building; **Phone** (204) 474-9259;  
**E-mail:** [judy\\_powell@umanitoba.ca](mailto:judy_powell@umanitoba.ca)

#### Animal Science

All students in the graduate program must meet with their advisor/advisory committee to determine courses. Courses must be listed on the departmental approval form (available from the Animal Science General Office) and written approval granted from both the advisor and the department head or designate. Registration revisions are to be dealt with and approved in a like manner.

Not all courses are offered each year.

#### Registration and program enquiries:

Cathy Plouffe, 201 Animal Science Building; phone: (204) 474-6028;  
Fax: (204) 474-7628  
E-mail: [animal\\_science@umanitoba.ca](mailto:animal_science@umanitoba.ca)

#### Entomology

Prior to registration, students must consult with their advisor and then present a completed registration approval form to the department head. Any changes after the initial registration must also be approved by both advisor and department head.

Registration approvals contact N.J. Holliday, phone (204) 474-6020,  
email: [Neil\\_Holliday@UManitoba.CA](mailto:Neil_Holliday@UManitoba.CA)

Registration assistance contact K. Graham, phone (204) 474-8077,  
email: [grahamk@Ms.UManitoba.CA](mailto:grahamk@Ms.UManitoba.CA)

#### Food Science

Prior to registration, students must consult with their advisor and then present a completed registration approval form to the department head. Any changes after the initial registration must also be approved by both advisor and department head.

Courses are subject to cancellation if there is insufficient enrolment. Courses with insufficient enrolment will be cancelled the first week of classes.

Registration enquiries: Allison Cranmer, 250 Ellis Building; phone (204) 474-9621

Registration approvals: Dr. Gary Fulcher, phone (204) 474-9065; [gary\\_fulcher@umanitoba.ca](mailto:gary_fulcher@umanitoba.ca)

#### Plant Science

All students in the graduate program must meet with their advisor/advisory committee to determine courses. Courses must be listed on the departmental approval form (available from the Plant Science General Office) and written approval granted from both the advisor and the department head or designate. Registration revisions are to be dealt with and approved in like manner. Not all courses are offered each year.

#### Registration and program enquiries:

Martha Blouw, 226 Agriculture Building; phone: (204) 474-8223;  
Fax: (204) 474-7528  
E-mail: [plantscience\\_gradstudies@umanitoba.ca](mailto:plantscience_gradstudies@umanitoba.ca)

#### Soil Science

Registration inquiries: Lynda Closson  
([Lynda\\_Closson@umanitoba.ca](mailto:Lynda_Closson@umanitoba.ca)),  
phone: (204) 474-8153.

Program information: Dr. David Lobb  
([lobbda@ms.umanitoba.ca](mailto:lobbda@ms.umanitoba.ca)), Chair, Graduate Studies Committee.



## 2.2 Faculty of Architecture

**Continuing Courses (CO'S):** Students who are unable to complete a course may receive a mark classification of CO until such time as a final grade can be established. The deadline for completion is normally not later than one year from the end of the term in which the course was originally registered.

If the course is not completed by the next September and the students intend completing the course(s), they must *re-register* for the course(s).

If you have any questions regarding registration that are NOT answered in

the Registration Guide, please contact one of the Graduate Student Advisors as noted below.

### Architecture

Please refer to the information communicated to you on course selection and requirements.

<http://umanitoba.ca/faculties/architecture/programs/113.htm>

Graduate Student Advisor: Gloria Baudry (204) 474-9286; fax (204) 474-7532;

[baudrygj@cc.umanitoba.ca](mailto:baudrygj@cc.umanitoba.ca); 201 Russell Building.

Graduate Student Advisor: Jodena Baertsoen (204) 474-8763; fax (204) 474-7532;

[baertsoe@cc.umanitoba.ca](mailto:baertsoe@cc.umanitoba.ca); 201 Russell Building.

### City Planning

Please refer to the information communicated to you on course selection and requirements. All new students must meet with their faculty advisor within the first month of classes. Students with registration issues should meet with City Planning Graduate Student advisor during the last two weeks in August or first week in September.

<http://umanitoba.ca/cityplanning>

Graduate Student Advisor: Yvonne Halden (204) 474-8769; fax (204) 474-7532

[haldenyl@cc.umanitoba.ca](mailto:haldenyl@cc.umanitoba.ca); 201 Russell Building.

### Interior Design

Prior to registration, all new students must contact the Graduate Student Advisor, between mid-August and commencement of classes, who will determine whether a

meeting with the Department Head is required. Timetable changes may occur throughout the summer. Department course list offerings and elective offerings are posted on the architecture website at <http://umanitoba.ca/interiordesign>

Graduate Student Advisor: Yvonne Halden (204) 474-8769; fax (204) 474-7532

[haldenyl@cc.umanitoba.ca](mailto:haldenyl@cc.umanitoba.ca); 201 Russell Building.

### Landscape Architecture

All new students should meet with the Department Head and must meet with the Graduate Student Advisor before registering. Returning students with registration issues should make an appointment with the Graduate Student Advisor prior to the first week in September. Courses may be cancelled if there is insufficient enrolment. Department course offerings and elective offerings will be mailed out and are also posted on the department website:

<http://umanitoba.ca/landscapearchitecture>

Graduate Student Advisor: Yvonne Halden (204) 474-8769; fax (204) 474-7532

[haldenyl@cc.umanitoba.ca](mailto:haldenyl@cc.umanitoba.ca); 201 Russell Building

### Design and Planning

Graduate Student Advisor: Yvonne Halden (204) 474-8769; fax (204) 474-7532

[haldenyl@cc.umanitoba.ca](mailto:haldenyl@cc.umanitoba.ca); 201 Russell Building

## 2.3 Faculty of Arts

### Anthropology

All students in the graduate program must meet with their advisor to determine their course load. Courses must be listed on the departmental approval form (available from the Anthropology general office) and written approval granted from both the Advisor and the department head or designate. Registration revisions are to be dealt with and approved in like manner.

Registration and program enquiries:

General Office, 435 Fletcher Argue Building; phone: (204) 474 9361;  
Fax: (204) 474 7600  
Email: [um-anthro@cc.umanitoba.ca](mailto:um-anthro@cc.umanitoba.ca)

### Economics



Prior to registering, all students must meet with a member of the Economics Department Graduate Studies Committee to determine their course load. The course load resulting from this meeting must be listed on the Departmental Course Approval Form (available from, 504 Fletcher Argue), and the form must be signed by a Graduate Studies committee member. The signed form must be submitted to Betty McGregor, 504 Fletcher Argue, who will then complete the registration process.

All course additions and withdrawals (registration revisions) must be approved in the same manner.

Registration and program enquiries:

Betty McGregor, 504 Fletcher Argue Building; **Phone** (204) 474 6240

**E-Mail:** [Betty\\_McGregor@umanitoba.ca](mailto:Betty_McGregor@umanitoba.ca)

### English

All students (new and returning) must have their courses approved by the graduate chair prior to registering. Any courses added/dropped/changed must be at all times approved by the graduate chair. Only those courses that have been approved will be credited to your program. Courses are subject to cancellation if there is insufficient enrolment.

Students are reminded that they must satisfy the language requirement prior to scheduling their thesis defence.

Registration Enquiries: English Graduate Program Assistant;

623 Fletcher Argue Building; phone (204) 474-7365, 8:30 a.m. to 4:30 p.m.

### French, Spanish and Italian

All returning and newly admitted students must consult with the graduate chair or the department head prior to registration. Students must fill out a pre-registration form which must be signed by the graduate chair or department head and submitted to Vonne Bannavong, 430 Fletcher Argue, who will then complete the registration process.

Registration enquiries: Vonne Bannavong, 430 Fletcher Argue;

phone: (204) 474 9313; E-mail: [Vonne\\_Bannavong@umanitoba.ca](mailto:Vonne_Bannavong@umanitoba.ca)

### German and Slavic Studies

Prior to registration in German or Slavic Studies, students must consult with the graduate chair or the department head. Departmental office: 328 Fletcher Argue; phone: (204) 474-9370; fax: (204) 474-7601.

### History

All new and returning students are required to see the chair or department head prior to attempting to register.

Students may only register for courses listed and approved on the Departmental Graduate Student Registration Form, available at the time of your meeting with the graduate chair. Any course registration revisions (addition and/or withdrawals) must be approved in the same manner. Your program, including the registration of the right courses, is your responsibility.

Students are reminded that they must satisfy the language requirement prior to graduation (French for Canadian History students).

Pre-Master's, Joint Master's and Ph.D. students may take 4000- and 7000- level courses offered by the Department of History at the University of Winnipeg. Consult the History Department, University of Manitoba for information on course offerings and registration.

**Registration Inquires:** Carol Adam, 403 Fletcher Argue Building;

**Phone:** (204) 474 8401

**E-mail:** [carol\\_adam@umanitoba.ca](mailto:carol_adam@umanitoba.ca)

### Icelandic Studies

Prior to registration for graduate courses in Icelandic, students must consult with the department head: Dr. Birna Bjarnadottir, 372 University College;  
**Phone:** (204) 474 9551

### Linguistics

Students must meet with their program advisor/thesis supervisor to determine course load. These courses must be approved by the department's Graduate Committee. All course additions and withdrawals (registration revisions) must be approved in the same manner.

For registration and program enquiries:

Debbie Spindler, 534 Fletcher Argue Building; **Phone:** (204) 474 9596.

E-mail: [spindlr@cc.umanitoba.ca](mailto:spindlr@cc.umanitoba.ca)

### Native Studies

All students must meet with the Graduate Program Chair to determine their course load. Prior to registering, students must have written approval from the Graduate Program Chair to take selected courses. All course additions and withdrawals (registration revisions) must be approved in the same manner.



For registration and program enquiries: Shirley McFaren,  
Graduate Program Assistant, 204E Isbister Building, phone  
(204) 474 9899.

E-mail: [mcfaren@cc.umanitoba.ca](mailto:mcfaren@cc.umanitoba.ca)

Further assistance is available from: Dr. Renate Eigenbrod,  
Graduate Program Chair, 204D Isbister Building, phone  
(204) 474 7026

E-mail: [eigenbrod@ms.umanitoba.ca](mailto:eigenbrod@ms.umanitoba.ca)

### Philosophy

All students (new and returning) in the Master's and pre-Master's programs of the Department of Philosophy must have their courses approved by the graduate chair prior to registering. Students may only register for, and will only receive credit for, those courses approved by the graduate chair.

Graduate Chair: Rhonda Martens, 456 University College;

phone: (204) 474 9104; fax: (204) 474 7586.

Email: [martensr@cc.umanitoba.ca](mailto:martensr@cc.umanitoba.ca)

Registration Enquiries: Sandi Mazur, 453 University College;  
phone (204) 474 6878.

### Political Studies/Public Administration (MPA)

All new and returning students are required to have their registration pre-approved by the Chair or designate prior to attempting to register (appointments must be held prior to July 1).

Students may only register for courses listed and approved on the Departmental Graduate Student Registration Form, available at the time of your meeting with the graduate chair. Registration revisions (addition and/or deletion) must be approved in the same manner.

Students may need to register for POLS 6010 Manitoba Legislative Internship.

Registration Inquiries: Erika Ing, 532 Fletcher Argue Building; phone (204) 474 9733; Email:  
[inge@cc.umanitoba.ca](mailto:inge@cc.umanitoba.ca)

### POLS 6010 Manitoba Legislative Internship

Registration Inquiries: Erika Ing, 532 Fletcher Argue Building; phone (204) 474 9733; Email:  
[inge@cc.umanitoba.ca](mailto:inge@cc.umanitoba.ca)

### Psychology

Prior to registration, all students (new and returning) must meet with their advisor to determine their program of study. Courses must be listed on a Departmental Program Registration Form (available on the web at

<http://umanitoba.ca/arts/psychology/graduate/forms.html>.

The form must be signed by the advisor and the graduate programs coordinator). Clinical Program students must obtain the director of clinical training's signature prior to that of the graduate programs coordinator. Only those courses that have been approved by the graduate office will be credited to a student's program. See the Registration Information section of this Guide for registration procedures.

All course additions and withdrawals (registration revisions) must be approved in the same manner.

Contact registration and program enquiries: e-mail:

[psych\\_grad\\_office@umanitoba.ca](mailto:psych_grad_office@umanitoba.ca)

### Religion

To obtain written approval for courses before registration, all students in the Religion Joint Master's Program must meet either the chair of the Joint Discipline Committee, Religion, or with the department head or designate. All Ph.D. students must meet first with the head, Department of Religion. Course additions and withdrawals must be approved in the same way.

### Sociology

All new and returning Pre-Masters, M.A., and Ph.D. students must meet with the Chair of Graduate Studies in Sociology to discuss their program of study (usually in late August). The Graduate Program Assistant will then register the student. All course additions and withdrawals must be arranged in a similar fashion.

For registration and program inquiries: Margaret Currie,  
Sociology Graduate Program Assistant, 320B Isbister Building, phone: (204) 474-9260. Email:

[Margaret\\_Currie@umanitoba.ca](mailto:Margaret_Currie@umanitoba.ca)

### 2.4 Clayton H. Riddell Faculty of Environment, Earth, and Resources Environment, Earth, and Resources and Geography

All students must meet with their program advisor/thesis supervisor to determine their course selections. Courses must be listed on the Departmental Registration Approval Form (available from the departmental office) and written approval from the advisor and department head or designate must be obtained. Students are also responsible for obtaining any instructor or special permission which may be required for certain courses.

All course additions and withdrawals (registration revisions) must be approved in the same manner.

Registration and program enquiries: Pat Gutoski  
210 Isbister Building; phone (204) 474 7065.

E-mail: [gutoski@cc.umanitoba.ca](mailto:gutoski@cc.umanitoba.ca)



## Geological Sciences

All students must consult with their advisor prior to registration and present a completed Program Form to the administrative assistant. The selection of courses and changes in a student's program must be approved by their advisor in the case of Masters students or their advisory committee in the case of doctoral students.

Students should consult the administrative assistant regarding the schedule of graduate course offerings in the department. Please note that some courses require a field component to be run before lectures begin in the fall. Courses with insufficient enrolment may be cancelled well in advance of the first week of lectures.

Registration inquiries: Brenda Miller  
phone (204) 474-6777; E-mail: [brenda\\_miller@umanitoba.ca](mailto:brenda_miller@umanitoba.ca)

## Natural Resources Institute

All returning and newly admitted students to the Natural Resources Institute are required to see their faculty advisor to complete their Degree Requirement Form prior to attempting to register. Appointments can be made by calling (204) 474 8373. Only courses that have been approved by the faculty advisor will be credited to a student's program.

Registration Inquiries: Dalia Naguib, 303 Sinnott Building;  
phone (204) 474 8373.

## 2.5 Faculty of Dentistry Oral Biology

All new or returning graduate students must have identified a faculty member willing to act as thesis supervisor. This must be done through personal interviews prior to registration. All programs of study must be approved by the department head or chair of the Graduate Studies and Research Committee.

Not all departmental graduate level courses are offered each year. Consult with appropriate faculty members.

Consult the department office for a list of courses offered.

Enquiries may be made: Chair, Graduate Studies and Research Committee; phone (204) 789 3705.

## Oral and Maxillofacial Surgery

Graduate students in Oral and Maxillofacial Surgery will be registered by the office assistant in Dental Diagnostic and Surgical Sciences. Prior to registration, a personal interview will be held with the head of the program to approve all programs of study.

Consult the department office for a list of courses offered.

Enquiries: phone: (204) 789 3633 or e-mail:  
[Oral\\_Surgery@umanitoba.ca](mailto:Oral_Surgery@umanitoba.ca)

## Periodontics

Graduate students in Periodontics will be registered by the office assistant in Dental Diagnostic and Surgical Sciences. Prior to registration, a personal interview will be held with the head of the program to approve all programs of study.

Consult the department office for a list of courses offered.

Enquiries: Periodontics, phone: (204) 789 3633 or  
e-mail: [Periodontics@umanitoba.ca](mailto:Periodontics@umanitoba.ca)

## Preventive Dental Sciences (Orthodontics)

All new and returning students are required to have their registration processed by the Program Assistant.

Registration and program enquiries: Cathy Watt, Program Assistant, Orthodontics at (204) 789-3628 or e-mail:  
[Cathy\\_Watt@umanitoba.ca](mailto:Cathy_Watt@umanitoba.ca)

## 2.6 Disability Studies

Students must meet with their program advisor to select and receive approval for courses to be taken, prior to registration. Any course revisions (additions and/or withdrawals) must be approved in the same manner.

## Continuing Courses (CO's)

Students who are unable to complete a 7000 level course may receive a mark classification of CO until such time as a final grade can be established. The deadline for completion is normally not later than one year from the end of the term in which the course was originally registered. If the course is not completed by August 31, students must re-register for the course for the next academic session in order to receive a grade.

Enquiries: Disability Studies Office (Room 128 Education Building)  
phone (204) 474 7017.

## 2.7 Faculty of Education

It is recommended that students read the registration information relevant to graduate students before attempting to register.

### 2.7.1 Registration Times and Status



Students are able to view their registration times on Aurora Student "<http://aurora.umanitoba.ca>," select Enrolment & Academic Records, select Registration, and then Registration Times and Status to view registration dates and times for a given term.

Students must ensure that courses to be taken have been approved and entered on their program approval form. If not approved, students should meet with their program advisor to select and approve the courses to be taken.

### 2.7.2 Registration Assistance

Office of Graduate & Professional Programs, and Research

227 Education Building

Office Hours: 8:30 a.m. to 4:30 p.m. Monday to Friday

Telephone: (204) 474 7886 or Toll Free in Manitoba 1 800 432 1960

Fax: (204) 474 7550

E-mail: [edgradpr@ms.umanitoba.ca](mailto:edgradpr@ms.umanitoba.ca)

Website: <http://umanitoba.ca/education>

### 2.7.3 Continuing Courses (CO'S)

Students who are unable to complete a 7000 level course within the term, with the approval of the instructor, may receive a mark classification of CO until such time as a final grade can be established. The deadline for completion is normally not later than one year from the end of the term in which the course was originally registered. If the course is not completed by August 31, students must re-register for the course(s) for the next term in order to finish the course and to receive a grade.

### 2.7.4 Occasional Students

Prior to registration, students must obtain written permission from the department head for 7000 level Education courses. This permission must be submitted to the Office of Graduate & Professional Programs, and Research prior to attempting to register.

### 2.7.4 Registration for student initiated courses

Prior to registration for student initiated courses, students must have the Student Initiated Form approved by their instructor and the department head and submitted to the Office of Graduate & Professional Programs, and Research. Upon receipt of the form, a Faculty of Education staff will schedule the course and contact the student with further instructions.

### 2.7.5 Registering for courses offered in other faculties

Graduate Studies

Education graduate students wanting to register for graduate courses outside the Faculty of Education are encouraged to contact the department concerned for registration procedures. In some cases, written approval may be required from the instructor and department head of the course requested. The written approval must be presented to the Office of Graduate & Professional Programs, and Research prior to attempting to register.

### 2.7.6 Students Registered in Other Faculties or Schools

Students registered in other faculties or schools wishing to register for an Education course may do so after a certain date. For details, see Class Schedule at "<http://aurora.umanitoba.ca>" for a given term and given course.

### 2.7.7 Visiting Students

Students who are working on a graduate program at another institution and wish to register for a graduate course at the University of Manitoba with the express purpose of having credit transferred to their home university must apply for admission to the Faculty of Graduate Studies by the published application deadline dates. Also, a letter of permission from their home university must be submitted to the Office of Graduate & Professional Programs, and Research, Faculty of Education prior to registration.

### 2.8 Faculty of Engineering

Courses are subject to cancellation if there is insufficient enrolment. Courses with insufficient enrolment may be cancelled the first week of classes. Not all courses will be offered each year — contact the department for courses that will not be offered. All returning and newly admitted students must see an academic advisor or the department head prior to attempting to register.

#### Biosystems Engineering

Registration inquiries: Debby Watson, E2-376 EITC; phone (204) 474 6033; email: [debby\\_watson@umanitoba.ca](mailto:debby_watson@umanitoba.ca)

#### Civil Engineering

Registration Inquiries: Connie Wenzoski, E3-386 EITC; phone (204) 474 8596; email: [wenzoski@ms.umanitoba.ca](mailto:wenzoski@ms.umanitoba.ca)

#### Electrical and Computer Engineering

Registration Enquiries: Karin Kroeker; Room E2-390 EITC phone (204) 474 9603; email: [karin\\_kroeker@umanitoba.ca](mailto:karin_kroeker@umanitoba.ca)

#### Mechanical and Manufacturing Engineering

Registration inquiries: Kusum Vyas, E2-327 EITC; phone (204) 474 6540; email: [vyas@cc.umanitoba.ca](mailto:vyas@cc.umanitoba.ca)



## 2.9 Faculty of Human Ecology Textile Sciences

All returning, newly admitted and occasional students must have their course selections and withdrawals approved by their advisor prior to registration.

Registration Inquiries: please see your advisor.

Application Inquiries: Dr. Wen Zhong, H517 Duff Roblin Bldg., phone: (204) 474-9913

Email: [zhong@cc.umanitoba.ca](mailto:zhong@cc.umanitoba.ca)

## Family Social Science

Prior to registration students must get approval for courses from their advisor.

*Readings course:* Prior to registering for a Readings course, students must arrange for a faculty member to direct in the course and get approval from the Family Social Sciences department head.

Registration inquiries:  
Secretary, Family Social Sciences Department;  
phone (204) 474 9225; email:  
[family\\_social\\_sciences@umanitoba.ca](mailto:family_social_sciences@umanitoba.ca)

## Human Nutritional Sciences

All returning or newly admitted graduate and occasional students must see a faculty advisor or the department head, and submit their course plan, prior to registering.

**Registration enquiries:** Pat Parish, Office Assistant; phone (204) 474 9901.

For program information contact Dr. Rotimi Aluko, Chair, Graduate Studies Committee; phone (204) 474-9555

## 2.10 Faculty of Kinesiology and Recreation Management Program Approval Form

All new students must complete a Graduate Program Approval Form, in consultation with their advisor, and submitted to the Graduate Program Chair, prior to registering for courses. Only courses that are included on the Program Approval Form will be credited to the student's program of study. The Advisor and Graduate Program Chair must approve any changes made to the Program of Study.

### Directed Study

Graduate Studies

Students may complete a maximum of two directed study courses (different topics) for a total of six credit hours; however, only one directed study (three credits) will count towards the minimum 12 credit hour course degree requirements. Students, in conjunction with the advisor for the course, must complete a Directed/Individual Study form. This form must include a description of the course work to be completed and an outline of how the final grade will be determined. This form must be approved by the Graduate Program Chair and filed with the Graduate Program Assistant who will register the student for the course.

### Registration and Program Assistance

Graduate Program Assistant, HLHP Research Institute  
General Office; phone 474 7493; fax: 261 4802;  
e-mail: [kinrecgrad@umanitoba.ca](mailto:kinrecgrad@umanitoba.ca)

## 2.11 Faculty of Management For information regarding the Asper MBA program, contact the Asper Graduate Program Office at:

**Phone:** (204) 474-8448

**Email:** [aspermba@umanitoba.ca](mailto:aspermba@umanitoba.ca)

For information regarding the Asper Ph.D. and M.Sc. programs, contact the Asper Graduate Program Office at:

**Phone:** (204) 474-8448

**Email:** [asper\\_phd\\_msc@umanitoba.ca](mailto:asper_phd_msc@umanitoba.ca)

## 2.12 Faculty of Medicine Biochemistry and Medical Genetics

All new and returning graduate students in the department of Biochemistry and Medical Genetics are required to complete a Course Approval Form available on the website:

<http://umanitoba.ca/faculties/medicine/units/biochem/student/2784.htm>

[http://umanitoba.ca/faculties/medicine/biochem/programs/registration\\_steps.html](http://umanitoba.ca/faculties/medicine/biochem/programs/registration_steps.html)

or in the general office, in consultation with their supervisor prior to registering for courses and making program changes. The Course Approval Form must be signed by the student, supervisor, graduate chair or the department head and submitted to the graduate program coordinator. Only courses that are included on the Course Approval Form will be credited to the student's program. All course additions and withdrawals (registration revision) must be approved in the same manner by completing or filling out the Registration Revision Form available on the website:



[http://umanitoba.ca/faculties/graduate\\_studies/media/registration\\_revision.pdf](http://umanitoba.ca/faculties/graduate_studies/media/registration_revision.pdf)

Consult the department office or browse the web for a list of course offerings.

<http://umanitoba.ca/faculties/medicine/units/biochem/student/graduate.html>

<http://umanitoba.ca/faculties/medicine/units/biochem/programs/graduate>

It should be noted that not all courses are offered every year and some courses will be held only with a minimum enrolment. Please check the Aurora catalog to find out when a course is offered ([https://aurora.umanitoba.ca/banprod/bwckctlg.p\\_disp\\_dyn\\_ctlg](https://aurora.umanitoba.ca/banprod/bwckctlg.p_disp_dyn_ctlg))

Registration enquiries: Mrs. Tuntun Sarkar

Email: [sarkar@cc.umanitoba.ca](mailto:sarkar@cc.umanitoba.ca)

Phone: (204) 789-3399

### Community Health Sciences

Prior to registration, all students must have obtained permission from the relevant course instructor and both their academic/thesis advisor and the graduate director (or designate). The program approval form is available from the Graduate Program office and on our website. Only courses that are listed on the Program Approval Form may be credited towards the student's program of study. All course additions and withdrawals are to be handled in like manner.

Not all courses are offered each year. Contact the Graduate office for a list of current course offerings.

**Registration enquiries:** Theresa Kennedy, S111, Medical Services Building, **Phone:** (204) 789-3655

### Human Anatomy and Cell Science

Prior to registration, all new and returning students must meet with their advisor or the Chair, Graduate Studies Committee in the Department to determine their program of study. All course additions and withdrawals (registration revisions) must be approved in the same manner. The Program Approval Form must also be signed by the Chair, Graduate Studies Committee or Department Head.

Consult the department office for a list of courses offered.

Registration and program enquiries: phone (204) 789 3411; (204) 789 3652 or email: [anatomycellsci@umanitoba.ca](mailto:anatomycellsci@umanitoba.ca)

### Immunology

Graduate Studies

All new and returning students must meet with their advisor to determine their program of study prior to registration. Once the student has met with their advisor and subsequently receives approval from the Department Head, they must contact the Administrative Assistant, who will register the student in their courses.

All course additions and withdrawals (registration revisions) must be approved in the same manner.

Consult the department office for a list of courses offered in 2006-07.

### Registration and program enquiries:

Karen Morrow, Administrative Assistant phone (204) 789 3509; email: [kmorrow@cc.umanitoba.ca](mailto:kmorrow@cc.umanitoba.ca)

### Medical Microbiology

Prior to registration, all new and returning students must meet with their advisor to determine their program of study. Students should register themselves by signing up for the Aurora Student service on the University of Manitoba website. If difficulties are incurred students may contact the Graduate Studies Committee Office Assistant as per the information below.

All course additions and withdrawals (registration revisions) must be approved in the same manner.

Not all courses are offered each year. Contact the department for a list of course offerings.

Registration and program enquiries, phone (204) 789 3444; email: [nelsonak@ms.umanitoba.ca](mailto:nelsonak@ms.umanitoba.ca)

### Medical Rehabilitation

Prior to registration, all new and returning students must meet with their advisor to determine their program of study.

All course additions and withdrawals (registration revisions) must be approved in the same manner.

Not all courses will be offered each year. Please check the Aurora catalog to find out when a course is offered ([https://aurora.umanitoba.ca/banprod/bwckctlg.p\\_disp\\_dyn\\_ctlg](https://aurora.umanitoba.ca/banprod/bwckctlg.p_disp_dyn_ctlg)).

Registration and program enquiries, phone (204) 272 3159; email: [msc\\_med\\_rehab@umanitoba.ca](mailto:msc_med_rehab@umanitoba.ca)

### Occupational Therapy

Course registration information for the incoming first year students will be forwarded to them by the Department/Program Assistant. Returning students will



have course registration information e-mailed to their umanitoba e-mail address by Doris Weigel.

Master of Occupational Therapy (M.O.T.) students are required to register themselves through Aurora Student. Aurora Student is available 7 days per week, 24 hours per day (subject to minor scheduled and unscheduled outages in off-peak hours), thus providing students with greater access/flexibility regarding the registration process.

#### Registration Exceptions

Students who have a failing grade(s) registered against them and/or have other outstanding academic matters (i.e. deferred or supplemental examinations, modified program, etc.) in regards to the previous academic session will not be allowed to register using Aurora Student until instructed to do so. Students falling into this category should initially contact Donna Collins at (204) 789-3422 or [dcollin@cc.umanitoba.ca](mailto:dcollin@cc.umanitoba.ca) for further information.

#### Registration Assistance

When registering for courses, if problems are encountered that you cannot resolve on your own, contact Doris Weigel at (204) 789-3248 or [dweigel@cc.umanitoba.ca](mailto:dweigel@cc.umanitoba.ca). When Doris is on holidays (**only**), please contact Julia Blonski at 977-5638 or [blonski@cc.umanitoba.ca](mailto:blonski@cc.umanitoba.ca) for assistance. Your queries will be addressed as soon as possible.

#### Students on HOLD

If your records are on "HOLD", you are prevented from any registration transaction until you have cleared this status.

#### **Pathology**

All programs of study must be approved by the Chair of Graduate Studies or by the Department Head.

Not all courses are offered each year. Please consult with the department office or appropriate faculty members.

Enquiries: Dr. Y. Myal, Chair, Graduate Studies, phone (204) 789 3538.

#### **Pharmacology**

Prior to registration, all new and returning students must meet with their advisor and Pharmacology Director of Graduate Studies to determine their program of study.

All course additions and withdrawals (registration revisions) must be approved in the same manner. Consult the department office for a list of courses offered.

Registration and program enquiries, phone (204) 789 3553; email: [pharmacology@umanitoba.ca](mailto:pharmacology@umanitoba.ca)

#### **Physical Therapy**

Course registration information for the incoming first year students will be forwarded to them by the Department/Program Assistant. Returning students will have course registration information e-mailed to their umanitoba e-mail address by Doris Weigel.

Master of Physical Therapy (M.P.T.) students are required to register themselves through Aurora Student. Aurora Student is available 7 days per week, 24 hours per day (subject to minor scheduled and unscheduled outages in off-peak hours), thus providing students with greater access/flexibility regarding the registration process.

#### Registration Exceptions

Students who have a failing grade(s) registered against them and/or have other outstanding academic matters (i.e. deferred or supplemental examinations, modified program, etc.) in regards to the previous academic session will not be allowed to register using Aurora Student until instructed to do so. Students falling into this category should initially contact Jenneth Swinamer at (204) 977-5636 or [swinamer@cc.umanitoba.ca](mailto:swinamer@cc.umanitoba.ca) for further information.

#### Registration Assistance

When registering for courses, if problems are encountered that you cannot resolve on your own, contact Doris Weigel at (204) 789-3248 or [dweigel@cc.umanitoba.ca](mailto:dweigel@cc.umanitoba.ca). When Doris is on holidays (**only**), please contact Julia Blonski at 977-5638 or [blonski@cc.umanitoba.ca](mailto:blonski@cc.umanitoba.ca) for assistance. Your queries will be addressed as soon as possible.

#### Students on HOLD

If your records are on "HOLD", you are prevented from any registration transaction until you have cleared this status.

#### **Physiology**

Prior to registration, all new and returning students must meet with their advisor to determine their program of study.

All course additions and withdrawals (registration revisions) must be approved in the same manner.

Not all courses are offered every year and some courses will be held only with a minimum enrolment. Consult the department office for a list of courses offered.

Registration and program enquiries, phone (204) 789 3764; email: [mcindle@ms.umanitoba.ca](mailto:mcindle@ms.umanitoba.ca)

#### **Surgery**



All new or returning graduate students must contact the Department: phone (204) 787 7277; email: [mbrychka@hsc.mb.ca](mailto:mbrychka@hsc.mb.ca).

### 2.13 Marcel A. Desautels Faculty of Music

All graduate students must meet with the Faculty's Registrar to obtain and complete a course approval form: this form will list the student's proposed course schedule. Students must receive written approval from both their advisor and the Chair of the Grad Studies program before registering. Registration revisions are to be approved in a like manner.

Not all courses are offered each year: please check with the Faculty's Registrar for current and upcoming offerings.

Registration and program enquiries: Registrar, 206 Music Building; phone: (204) 474-9133; Fax: (204) 474-7546; email: [sleeson@cc.umanitoba.ca](mailto:sleeson@cc.umanitoba.ca)

New Supplemental Regulations governing the Marcel A. Desautels Faculty of Music graduate programs came into effect July 2008. Supplemental Regulations may be found on the Faculty of Graduate Studies website or at <http://umanitoba.ca/music>. Future Music Students, Graduate Studies.

### 2.14 Peace and Conflict Studies

Prior to registering, all students (new and returning) must meet with their program advisor to select and receive approval for courses to be taken. Any course revisions (additions and/or withdrawals) must be approved in the same manner.

#### Registration and program enquiries:

Mauro Centre, 252 St. Paul's College  
**Phone:** (204) 474 6052  
**Fax:** (204) 474 8828  
**Email:** [mauro\\_centre@umanitoba.ca](mailto:mauro_centre@umanitoba.ca)

### 2.15 Faculty of Pharmacy

All students in the graduate program must meet with their advisor/advisory committee to determine courses. Courses must be listed on the Faculty Approval Form (available from the Pharmacy General Office) and written approval granted from both the advisor and the graduate chair. Any registration revisions (withdrawals or additions) are to be dealt with and approved in a like manner. Graduate students who register in any course that is not approved by the advisor will be withdrawn from the course.

Not all courses are offered each year. Registration inquiries: Phone (204)474-6008.

### 2.16 Faculty of Science

#### Chemistry

All returning and new graduate students in the Department of Chemistry must complete a Graduate Program Approval form and consult with the Academic Programs Administrator. The selection of courses and changes in a student's program must be initiated by their graduate advisor in the case of Masters students or their advisory committee in the case of doctoral students. Students should consult the Academic Programs Administrator.

Registration assistance: Heather Paterson; phone 474 6243; e-mail [heather\\_paterson@umanitoba.ca](mailto:heather_paterson@umanitoba.ca)

General inquiries should be directed to the general office, 360 Parker; phone 474 9321, e-mail [chemistry\\_dept@umanitoba.ca](mailto:chemistry_dept@umanitoba.ca)

#### Computer Science

All students must consult with their advisor prior to registration and hand in a completed registration form for approval to E2-445 EITC. Any changes, after the initial registration, must also be approved by the advisor.

See the sections, Registering for Thesis and Practicum, and Graduate Studies Course Numbers.

A listing of available courses can be picked up at the departmental general office, E2-445 EITC. Courses are subject to cancellation if there is insufficient enrolment.

Registration Enquiries: Lynne Romuld; phone (204) 474 8669 or [romuld@cs.umanitoba.ca](mailto:romuld@cs.umanitoba.ca).

#### Mathematics

All new and returning students are required to consult with a department advisor ([mathematics\\_dept@umanitoba.ca](mailto:mathematics_dept@umanitoba.ca)) prior to registration. Contact H.D. Aldwyn ([mathematics\\_dept@umanitoba.ca](mailto:mathematics_dept@umanitoba.ca)) at (204) 474 8703.

#### Mathematical, Statistical and Computational Sciences

All new and returning students in the Master of Mathematical, Statistical and Computational Sciences must consult with the Director prior to registration.

Registration inquiries: [iims@umanitoba.ca](mailto:iims@umanitoba.ca) Phone: (204) 474-6724

#### Microbiology

All new and returning graduate students in the Department of Microbiology must have their programs approved by their advisor and the department head prior to registration.



For registration inquiries: Sharon Berg; phone (204) 474 9372;  
e-mail [sberg@ms.umanitoba.ca](mailto:sberg@ms.umanitoba.ca)

### **Physics and Astronomy**

All students must consult with their advisor prior to registration.

Registration Inquiries: Susan Beshta; phone (204) 474 9817.

### **Statistics**

All new and returning graduate students in the Department of Statistics must consult with the grad chair and the administrative assistant prior to attempting to register.

All students must consult with their advisor prior to registration and present a completed registration form to 338 Machray Hall. Any changes, after the initial registration, must also be approved by the advisor.

A listing of available courses can be picked up at the departmental general office, 338 Machray Hall.

Registration inquiries: Liqun Wang; phone 474 6270;

e-mail [liqun\\_wang@Umanitoba.ca](mailto:liqun_wang@Umanitoba.ca).

or the administrative assistant, Margaret Smith, 338 Machray Hall;

phone 474 9801; e-mail [Margaret\\_Smith@Umanitoba.ca](mailto:Margaret_Smith@Umanitoba.ca)

### **2.17 Faculty of Social Work**

Students must meet with their faculty advisor to select and approve the courses before registering.

Registration assistance: (204) 474 8350,  
Email: [singleto@cc.umanitoba.ca](mailto:singleto@cc.umanitoba.ca)

(204) 474 9152,  
Email: [nowakaj@ms.umanitoba.ca](mailto:nowakaj@ms.umanitoba.ca)



## Université de Saint-Boniface

Université de Saint-Boniface

200 De la Cathédrale Avenue

Winnipeg, MB R2H 0H7

Canada

Phone: 204-233-0210

Toll free in Canada: 1-888-233-5112

Fax: 204-237-3240

[info@ustboniface.mb.ca](mailto:info@ustboniface.mb.ca)

### Université de Saint -Boniface Profile and Programs Offered

#### Profil de l'université

L'Université de Saint-Boniface (l'Université), fondée en 1818, est située dans le quartier francophone au cœur même de la ville de Winnipeg. Ce quartier est situé sur les rives des rivières Rouge et Seine, dans l'est de Winnipeg.

L'Université de Saint-Boniface est le plus ancien établissement postsecondaire de l'Ouest canadien et est l'université de langue française au Manitoba. Elle est située à deux pas du centre-ville de Winnipeg, carrefour de nombreuses activités culturelles et sportives. L'Université est accessible à toute personne apte à poursuivre des études postsecondaires en français. Avec une vingtaine de programmes et 1 200 étudiants et étudiantes provenant de 25 pays, l'Université offre une éducation universitaire générale et spécialisée ainsi qu'une formation technique et professionnelle ([École technique et professionnelle](#)). À l'Université, nous avons l'intime conviction que l'apprentissage doit se poursuivre toute la vie! Notre Division de l'éducation permanente offre une formation continue (langues, développement professionnel, développement personnel, etc.) de qualité exceptionnelle ainsi que des programmes uniques destinés aux enfants d'âge scolaire (pour de plus amples renseignements, veuillez consulter la rubrique – Écoles de langues – Formation continue sur notre site web – [www.cusb.ca](http://www.cusb.ca)).

Bien ancrée dans son milieu, l'Université contribue pleinement à la vitalité et à l'épanouissement de la francophonie manitobaine, canadienne et internationale. Grâce à son enseignement de qualité et à sa recherche dynamique, elle rayonne largement au-delà de ses frontières. Établissement à dimension humaine, l'Université se définit comme un milieu interculturel inclusif qui contribue au développement global de la personne.

#### Atouts de l'établissement

L'Université offre toute une gamme de programmes de premier cycle. Les étudiants obtiendront un diplôme supérieur tout en développant une variété de compétences hautement recherchées sur le marché du travail, notamment celle du bilinguisme. La Faculté des arts offre un baccalauréat général, un baccalauréat ès arts avec spécialisation (français) et une maîtrise ès arts (études canadiennes). La Faculté des sciences offre un baccalauréat ès sciences (majeure conjointe – microbiologie/biochimie) et un baccalauréat ès sciences (général). La Faculté d'éducation offre, après un premier baccalauréat, un baccalauréat en éducation, niveaux élémentaire et intermédiaire, un baccalauréat en éducation, niveau secondaire, un diplôme post baccalauréat en éducation et une maîtrise en éducation. L'École de traduction offre un baccalauréat ès arts avec spécialisation (traduction) et un certificat en traduction. L'École d'administration des affaires offre un baccalauréat en administration des affaires, tandis que l'École de service social offre un baccalauréat en service social.

Dans le secteur parascolaire, l'Université offre un programme comprenant de nombreuses activités dans les domaines artistique, sportif et social. Celles-ci apportent une dimension fort enviable à la vie étudiante.

En somme, l'Université est en mesure d'offrir une éducation de qualité supérieure, celle qui ouvrira les portes d'une future carrière tout en permettant une croissance sur le plan personnel.

L'Université embauche 110 professeurs équivalent plein temps. Le rapport étudiants/professeur est bas et les classes sont petites. La clientèle étudiante bénéficie de l'expertise d'un corps professoral qui s'illustre grâce à ses réalisations et son engagement envers l'établissement.

#### Formation universitaire

L'Université de Saint-Boniface offre toute une gamme de programmes universitaires de premier cycle en arts, en service social, en traduction, en sciences, en éducation, en administration des affaires et en sciences infirmières, ainsi que des programmes d'études supérieures en éducation et en études canadiennes.

Dès septembre 2012, les étudiants et les étudiantes peuvent être admis directement en arts, en sciences ou en administration des affaires selon les critères d'admission spécifiques. Les étudiants et les étudiantes qui ne rencontrent pas les critères d'admission directe doivent compléter une [première année universitaire](#) (U1) avant de s'inscrire au programme de baccalauréat de leur choix.

#### FACULTÉ/ÉCOLE

[Faculté des arts](#)

#### DIPLÔME DÉCERNÉ

[Baccalauréat ès arts \(général\)](#)

[Baccalauréat ès arts \(Latin-Philosophie\)](#)

[Baccalauréat ès arts spécialisé en français](#)

#### DURÉE

3 ans

3 ans

4 ans



	<a href="#">Baccalauréat ès arts majeure avancée en français</a>	4 ans
	<a href="#">Maîtrise ès arts en études canadiennes (par Internet)</a>	-
<a href="#">École de traduction</a>	<a href="#">Baccalauréat spécialisé en traduction</a>	4 ans
	<a href="#">Baccalauréat spécialisé en traduction (par Internet)</a>	120 crédits
	<a href="#">Baccalauréat avec double spécialisation en français et en traduction</a>	4 ans
	<a href="#">Certificat de traduction</a>	30 crédits
	<a href="#">Certificat de traduction (par Internet)</a>	30 crédits
<a href="#">École d'administration des affaires</a>	<a href="#">Baccalauréat en administration des affaires</a>	4 ans
<a href="#">Faculté des sciences</a>	<a href="#">Baccalauréat ès sciences (général)</a>	3 ans
	<a href="#">Baccalauréat ès sciences (majeure)</a>	4 ans
<a href="#">École de service social</a>	<a href="#">Baccalauréat en service social</a>	4 ans
<a href="#">Faculté d'éducation</a> <i>après un premier baccalauréat</i>	<a href="#">Baccalauréat en éducation, niveau élémentaire</a>	2 ans
	<a href="#">Baccalauréat en éducation, niveau secondaire</a>	2 ans
	<a href="#">Diplôme postbaccalauréat en éducation</a>	30 crédits
	<a href="#">Maîtrise en éducation spécialisée en counselling*</a>	-
	<a href="#">Maîtrise en éducation spécialisée en éducation inclusive</a>	-
	<a href="#">Maîtrise en éducation spécialisée en administration scolaire*</a>	-
	<a href="#">Maîtrise en éducation spécialisée en langue, littérature et curriculum</a>	-

\* programme offert par Internet et sur place

Des études universitaires entreprises à l'Université de Saint-Boniface ouvrent la voie à des programmes dans d'autres universités. En voici quelques exemples à l'Université du Manitoba.

Université du Manitoba - Faculté ou école	Diplôme décerné	DURÉE TOTALE	DURÉE à l'USB
Pharmacie	Baccalauréat en pharmacie	5 ans	1 an
Médecine dentaire	Doctorat en médecine dentaire	6 ans	2 ans
Droit	Baccalauréat en droit	5 ans	2 ans
Médecine	Docteur	7 ans	4 ans
Réadaptation médicale	Baccalauréat en réadaptation médicale	4 ans	1 an

## Admission

Vous voulez poursuivre vos études à l'Université de Saint-Boniface? La première étape est de déposer votre candidature à un des programmes de votre choix. Après avoir reçu l'[admission](#) officielle, vous pourrez passer à l'[inscription](#) aux cours.

Cette section contient les renseignements nécessaires pour faire votre demande d'admission pour les programmes de l'Université de Saint-Boniface.

Si vous n'avez jamais étudié dans cet établissement, veuillez lire attentivement les renseignements ci-dessous.

Si vous n'avez pas encore obtenu votre relevé de notes finales de 12<sup>e</sup> année, vous pouvez quand même présenter une demande d'admission. Aussitôt les résultats reçus, il faudra les faire parvenir au Registrariat.

Si vous êtes en provenance d'une autre université ou d'un autre établissement d'enseignement postsecondaire, vous devez soumettre un relevé de notes officiel au moment de la demande d'admission ou dès que vos notes finales seront disponibles.

## Étapes d'admission

### 1. La préparation

- Choisissez un

[programme](#) dans lequel vous désirez étudier.

Assurez-vous de répondre aux



[conditions générales](#) d'admission et aux [exigences particulières](#) du programme choisi.

Déterminez votre [statut étudiant](#).

### Remplir le formulaire

- Remplissez votre [formulaire de demande d'admission](#).

Faites parvenir votre formulaire d'admission, les **documents requis** ainsi que les [frais d'admission](#) au Registrariat, et ce, avant la **date limite d'admission**.

### Suivi de la demande

- Il faut prévoir un délai de deux à trois semaines pour le traitement de votre demande. Haut du formulaire

### Inscription

Dès que vous recevrez une confirmation écrite de votre admission à un programme particulier, vous pourrez vous inscrire en remplissant un formulaire d'inscription disponible au Registrariat.

- Si vous aviez été admis, mais n'avez pas suivi de cours depuis cinq ans, vous devrez obtenir l'autorisation de la faculté avant de vous réinscrire pour vous assurer que les cours déjà suivis satisfont aux exigences du programme actuel. Vous devrez ainsi remplir un formulaire de demande de réadmission disponible au Registrariat.
- Si vous désirez changer de faculté, vous devez remplir un formulaire de demande de transfert de faculté disponible au Registrariat.
- Si vous choisissez d'étudier à l'Université de Saint-Boniface, vous devez vous inscrire à cet établissement, même si vous comptez suivre un ou plusieurs cours à l'Université du Manitoba. Vous devrez toutefois payer vos frais de cours auprès de l'Université du Manitoba.
- Si vous voulez vous inscrire à un ou à plusieurs cours à l'USB, mais que votre établissement d'appartenance est l'Université du Manitoba ou tout autre collège affilié à l'Université du Manitoba, vous devez vous inscrire auprès de votre établissement d'appartenance.
- L'USB vous fera parvenir par courriel une facture pour vos frais de cours. Veuillez consulter

[l'avis aux étudiants](#) concernant l'envoi des factures pour l'année académique.

Chaque faculté, école et programme peut avoir des règlements académiques précis. Il vous revient de prendre connaissance des règlements qui vous concernent et de les respecter. Pour connaître ces renseignements, veuillez

consulter l'[Annuaire](#), sous la rubrique *Règlements académiques* de votre faculté ou école. Consultez également la section réservée à votre programme, qui pourrait contenir ses propres exigences.

### Exigences linguistiques

En général, les exigences linguistiques minimales pour tous les programmes d'études universitaires et collégiaux exigent l'inscription à un plein cours ou à deux demi-cours de français. La réussite de ce ou ces cours est une condition d'obtention du diplôme. Veuillez noter que ces exigences constituent un minimum seulement.

Les profils linguistiques servent à vous diriger vers les cours de langue appropriés et à proposer les mesures d'enrichissement qui permettront de combler les lacunes, le cas échéant.

**Toute personne qui s'inscrit une première fois à l'USB fait dresser son profil linguistique en français par le Service de perfectionnement linguistique (SPL) avant de s'inscrire.**

Puisque certains programmes exigent aussi des connaissances de la langue anglaise, les personnes admises à ces programmes et qui connaissent peu l'anglais doivent également faire dresser leur profil linguistique en anglais avant de s'inscrire.

Certains programmes exigent des attestations de mérite et d'excellence en français qui sont évaluées par le **Test de maîtrise du français écrit** et décernées par l'entremise du SPL.

Si vous êtes **étudiante ou étudiant international et que votre langue première ou dominante est le français**, consultez le document [Exigences linguistiques imposées aux étudiantes et aux étudiants internationaux](#).

### Registrariat

Le Registrariat est le point d'entrée pour étudier à l'Université de Saint-Boniface. En plus de fournir de l'information sur l'admission à un programme, l'inscription aux cours, l'aide financière disponible et l'horaire des cours, le Registrariat est responsable des éléments suivants :

- [attestations d'études](#);

[relevés de notes](#);  
[procédure d'appel de note](#);  
[participation à la collation des grades](#);  
[changements d'adresse](#);  
[changements de nom](#)

Le Registrariat est ouvert du lundi au vendredi de 8 h 30 à 16 h 30.

Registrariat  
Université de Saint-Boniface  
Téléphone : 1-204-235-4408



Numéro sans frais au Canada : 1-888-233-5112  
[registra@ustboniface.mb.ca](mailto:registra@ustboniface.mb.ca)

Notre site web : [www.cusb.ca](http://www.cusb.ca)

## **Maîtrise en Études canadiennes-Université de Saint-Boniface**

The Maîtrise ès Arts, études canadiennes is offered by the Université de Saint-Boniface, an affiliated college of the University of Manitoba, **in French only, and only via the Internet**. There are currently 5 students enrolled in the program. Several have recently completed their MA in études canadiennes, while a few have withdrawn from the program. Students are generally mid-career and are enrolled in the programme on a part-time basis, out of personal interest or for career enhancement. Graduates can pursue careers in the federal or provincial public service, in journalism, in the Foreign Service, or in the private sector; in addition, graduates of the programme may be admitted to doctoral programs, subject to program requirements.

Graduates of this program will receive a Maîtrise ès Arts en études canadiennes

### **Admission**

In addition to the minimum admission requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this calendar, students must have taken four (4) years of studies at the university level. A pre-M.A. program is not available at this time.

### **Admission Deadlines**

Canadian/U.S. students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 6 months prior to their intended start date. International students should submit their application and supporting documentation to the Faculty of Graduate Studies at least 9 months prior to their intended start date.

### **Program Requirements**

In addition to the minimum course requirements of the Faculty of Graduate Studies found in the Graduate Studies Regulations Section of this *Calendar*, students must complete a minimum number of 18 credit hours of graduate coursework. In addition, students must submit an acceptable thesis and pass a thesis oral examination.

Language requirement: Reading and comprehension skills in both French and English; course work and the thesis may be written in either French or English, subject to availability of a bilingual instructor.

Expected time to graduate: 2 - 3 Years

Université de Saint Boniface

## **Education-Université de Saint-Boniface**

The Department offers the following specializations: Inclusive Special Education; Educational Administration; Guidance and Counselling; Language, Literacy and Curriculum. Some courses are the French equivalent of the courses offered at the Faculty of Education, University of Manitoba. Many courses are specific to French education in the Province of Manitoba.

Contact the department for information on this program of study.

## **Courses taught at Université de Saint-Boniface**

### **Faculté des arts-Anthropology**

**ANTH 1211** L'origine et l'antiquité de l'humanité (A) Cr.Hrs.3 (L'ancien 076.121) Une introduction à l'anthropologie physique et à l'archéologie. Les sujets suivants seront présentés: évolution biologique, évolution et cultures des primates, fossiles démontrant la théorie de l'évolution, origine et développement de la culture humaine. L'étudiant(e) qui détient les crédits du ANTH 1211 (076.121) ne peut se faire créditer aucun des cours ANTH 1210 (076.121) ou l'ancien 076.120. Donnée au l'Université de Saint-Boniface.

**ANTH 1221** Anthropologie culturelle (A) Cr.Hrs.3 (L'ancien 076.122) Étude comparative des sociétés et des cultures humaines. Les sujets suivants seront présentés: institutions familiales, sociales, économiques et politiques, langage vocal humain, systèmes de parenté, de rites et de croyances, stabilité et changements culturels. L'étudiant(e) qui détient le crédits du ANTH 1221 (076.122) ne peut se faire créditer aucun des cours ANTH 1220 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.120. Donnée au l'Université de Saint-Boniface.

**ANTH 2001** Culture, société et pouvoir Cr.Hrs.3 Aperçu des idées centrales à analyse des relations sociales, en mettant l'emphase sur l'individu, l'identité, le genre, la "race", l'ethnicité, la classe sociale et la dynamique de caste. L'étudiante et l'étudiant ne peut pas se faire créditer à la fois ANTH 2001 et aucun de ANTH 2000, l'ancien ANTH 2390 ou l'ancien ANTH 2391. Préalables : [une note minimale de C dans un des cours suivants : ANTH 1220 (076.122), ANTH 1221 (076.122), ANTH 1520 (076.152), l'ancien 076.109 ou l'ancien 076.120] ou l'autorisation écrite de la professeure ou du professeur.

**ANTH 2011** Langage et culture (B) Cr.Hrs.3 (L'ancien 076.201) Considération générale de la nature du langage et des inter-relations entre le langage et les autres aspects de la culture. Corrélations socio-culturelles des variations linguistiques. Ethnographie de la communication. Origine et évolution du langage. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 2011 (076.201) et le ANTH 2370 (076.237). Préalable: [une note minimale de C dans un



des cours suivants: ANTH 1220 (076.122) ou ANTH 1221 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.120] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**ANTH 2041** Les Amérindiens de l'Amérique du Nord: Une étude socioculturelle (B) Cr.Hrs.3 (L'ancien 076.204) Survol ethnographique des cultures des peuples amérindiens de l'Amérique du Nord. L'étudiant(e) qui détient le crédits du ANTH 2041 (076.204) ne peut se faire créditer aucun des cours ANTH 2040 (076.204) ou l'ancien 076.345. Préalable: [une note minimale de C dans un de: ANTH 1220 (076.122) ou ANTH 1221 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.109 ou l'ancien 076.120] ou le consentement écrite du professeur. Donné au l'Université de Saint-Boniface.

**ANTH 2071** Religions amérindiennes et inuites (B) Cr.Hrs.3 (L'ancien 076.207) Étude comparative et interprétative des valeurs, croyances et pratiques religieuses propres aux traditions autochtones. Une attention particulière sera accordée aux religions traditionnelles, à l'impact du christianisme sur ces religions, et à l'émergence de la spiritualité autochtone contemporaine en mettant l'accent sur l'expérience et les structures, fonctions et significations des mythes, récits et rituels qui composent l'idéologie religieuse autochtone. Donné au l'Université de Saint-Boniface.

**ANTH 2381** Arts, symboles et cultures (B) Cr.Hrs.3 (L'ancien 076.238) Étude des contextes sociaux et des fonctions des comportements artistiques et symboliques humains dans une perspective comparative. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 2381 (076.238) et le ANTH 2380 (076.238). Préalable: [une note minimale de C dans un des cours suivants: ANTH 1220 (076.122) ou ANTH 1221 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.109 ou l'ancien 076.120] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**ANTH 2551** Culture et l'individu (B) Cr.Hrs.3 (L'ancien 076.255) Étude des corrélations entre le cycle de vie, les fonctions et dysfonctions psychologiques, et les institutions sociales et culturelles. L'accent est mis sur les rituels d'enculturation et du cycle de vie. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 2551 (076.255) et le ANTH 2550 (076.255). Préalable: [une note minimale de C dans un des cours suivants: ANTH 1220 (076.122) ou ANTH 1221 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.109 ou l'ancien 076.120] ou l'autorisation écrite du professeur. Donné au l' Université de Saint-Boniface.

**ANTH 2831** Méthodes en ethnologie (B) Cr.Hrs.3 (L'ancien 076.283) Panorama des méthodes de recherche utilisées en ethnologie, y compris les techniques analytiques et de recherche sur le terrain. Préalable: [une note minimale de C dans un des cours suivants: ANTH 1220 (076.122) ou ANTH 1221 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.120] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**ANTH 3321** Femmes, sociétés et cultures (B) Cr.Hrs.3 (L'ancien 076.332) Étude critique des rôles de la femme selon une approche interculturelle à partir d'analyses ethnographiques des sociétés et des cultures africaines, amérindiennes et asiatiques. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 3321 (076.332) et le ANTH 3320 (076.332). Préalable: [une note minimale de C dans un des

cours suivants: ANTH 1220 (076.122) ou ANTH 1221 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.109 ou l'ancien 076.120] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**ANTH 3381** Problèmes sociaux contemporains et l'anthropologie (B) Cr.Hrs.3 (Ancien 076.338) Étude de la pauvreté, de la responsabilité sociale, du colonialisme, du racisme, de l'éducation, de la dégradation de l'écologie et de la violence du point de vue anthropologique. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 3381 (076.338) et le ANTH 3380 (076.338). Préalable : une note minimale de C dans [ANTH 2000 ou ANTH 2001 + un cours de 3 cr.hrs. de niveau 2000 du groupe B] ou [l'ancien ANTH 2391 (076.239) ou l'ancien ANTH 2390 (076.239)] ou l'autorisation écrite de la professeure ou du professeur.

**ANTH 3461** Ethnologie des Amérindiens de l'Amérique du Nord (B) Cr.Hrs.3 (L'ancien 076.346) Études ethnographiques et ethnologiques de quelques sociétés amérindiennes de l'Amérique du Nord. On étudiera aussi les changements survenus depuis les premiers contacts. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 3461 (076.346) et le ANTH 3460 (076.346). Préalable: [une note minimale de C dans un des cours suivants: ANTH 1220 (076.122) ou ANTH 1221 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.109 ou l'ancien 076.120] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**ANTH 3471** Histoire de la pensée anthropologique (B) Cr.Hrs.3 (Ancien 076.347) Étude du développement des principaux paradigmes des courants théoriques et méthodologiques en anthropologie. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 3471 (076.338) et le ANTH 3470 (076.338). Préalable : une note minimale de C dans [ANTH 2000 ou ANTH 2001 + un cours de 3 cr.hrs. de niveau 2000 du groupe B] ou [l'ancien ANTH 2391 (076.239) ou l'ancien ANTH 2390 (076.239)] ou l'autorisation écrite de la professeure ou du professeur.

**ANTH 3501** Peuples de l'Arctique (B) Cr.Hrs.3 (L'ancien 076.350) Étude ethnographique des peuples autochtones des régions circumpolaires d'Asie, d'Amérique du Nord et du Groenland, avec une attention spéciale portée aux situations causées par différents contacts culturels. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 3501 (076.350) et le ANTH 3500 (076.350). Préalable: [une note minimale de C dans un des cours suivants: ANTH 1220 (076.122) ou ANTH 1221 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.109 ou l'ancien 076.120] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**ANTH 3531** Peuples d'Amérique du Sud (B) Cr.Hrs.3 (L'ancien 076.353) Étude de certaines cultures sudaméricaines, notamment celles des Andes, de l'Amazonie et de la Patagonie, Seront analysées les premières civilisations de même que l'adaptation des autochtones à la société contemporaine. Donné au l'Université de Saint-Boniface.

**ANTH 3551** Sous-cultures canadiennes (B) Cr.Hrs.3 (L'ancien 076.355) Étude anthropologique de la communauté, de l'ethnicité et du statut social dans la société



canadienne. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 3551 (076.355) et le ANTH 3550 (076.355). Donné au l'Université de Saint-Boniface.

**ANTH 3751** Globalisation et mondialisation: Une perspective anthropologique (B) Cr.Hrs.3  
(L'ancien 076.375) Perspective anthropologique sur la mondialisation et sur l'expansion du capitalisme dans les zones périphériques du monde. Étude de la transformation des sociétés et cultures autochtones; de l'émergence des conflits ethniques; et de la résistance. Approche comparative de processus transnationaux et globaux particuliers. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 3751 (076.375) et le ANTH 3750 (076.375). Préalable: [une note minimale de C dans le ANTH 2390 (076.239) ou le ANTH 2391 (076.239)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**ANTH 3811** Anthropologie des systèmes de croyances (B) Cr.Hrs.3  
(L'ancien 076.381) Étude comparative des systèmes de croyances, de rites sacrés et de cérémonies dans les sociétés et les cultures du monde. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 3811 (076.381) et le ANTH 3810 (076.381). Préalable: [une note minimale de C dans un des cours suivants: ANTH 1220 (076.122) ou ANTH 1221 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.109 ou l'ancien 076.120] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**ANTH 3971** Ethnographie régionale (B) Cr.Hrs.3  
(L'ancien 076.397) Survol ethnographique de la culture d'une aire géographique d'intérêt pour le département ou l'étudiant. L'aire étudiée peut changer d'une année à l'autre. L'étudiant(e) ne peut se faire créditer à la fois le ANTH 3971 (076.397) et le ANTH 3970 (076.397). Préalable: [une note minimale de C dans un des cours suivants: ANTH 1220 (076.122) ou ANTH 1221 (076.122) ou ANTH 1520 (076.152) ou l'ancien 076.120] ou l'autorisation écrite du professeur. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donné au l'Université de Saint-Boniface.

## Faculté des arts-Arts

**ARTS 1111** Introduction à l'université Cr.Hrs.3  
(L'ancien 099.111) Cours offert sous forme de séminaire dont le but est de faciliter la transition entre le secondaire et l'université. Développement des connaissances, des compétences et des attitudes nécessaires pour bien réussir les études universitaires. Un maximum de 30 inscriptions par section. Offert seulement aux étudiants et aux étudiants qui only complété mois de 12 crédits. L'étudiant(e) ne peut se faire créditer à la fois le ARTS 1111 (099.111) et le ARTS 1110 (099.111). Donné au l'Université de Saint-Boniface.

## Faculté des arts-Economics

**ECON 1011** Introduction à la microéconomie Cr.Hrs.3  
Étude des principes de base de la microéconomie, plus particulièrement l'offre et la demande, la détermination des prix, les structures de marché, l'allocation des ressources, le comportement des consommateurs et des entreprises ainsi que quelques exemples d'interventions du gouvernement

dans les marchés. Des sujets comme l'inégalité économique, l'équité, les effets externes, les biens collectifs ou autres enjeux politiques ou de microéconomie peuvent aussi être traités dans ce cours. L'étudiant(e) qui détient les crédits du ECON 1011 ne peut se faire créditer aucun des cours ECON 1200 (018.120), ECON 1201 (018.120), ECON 1210 (018.121), ECON 1211 (018.121), ECON 1220 (018.122), ECON 1221 (018.122), ou ECON 1010

**ECON 1021** Introduction à la macroéconomie Cr.Hrs.3  
Étude des principes de base de la macroéconomie, plus particulièrement l'offre et la demande agrégées, les indicateurs économiques que sont le chômage et l'inflation, le PIB et le niveau de vie, les finances publiques et la politique budgétaire, la monnaie et la politique monétaire. Quelques éléments de l'économie mondiale tels que taux de change et balance des paiements peuvent aussi être traités dans ce cours. L'étudiant(e) qui détient les crédits du ECON 1021 ne peut se faire créditer aucun des cours ECON 1200 (ancien 018.120), ECON 1201 (ancien 018.120), ECON 1210 (ancien 018.121), ECON 1211 (ancien 018.121), ECON 1220 (018.122), ECON 1221 (018.122), ou ECON 1020

**ECON 1211** Introduction aux politiques et aux problèmes économiques canadiens Cr.Hrs.3  
(L'ancien 018.121) Une étude de principes majeurs qui sous-tendent et de certains facteurs qui influencent l'économie canadienne et de ses régions. L'étudiant (e) qui détient les crédits du ECON 1211 ne peut se faire créditer aucun des cours ECON 1210 (018.121), l'ancien ECON 1200 (018.120), l'ancien ECON 1201 (018.120), ECON 1010, ECON 1020, ECON 1011 ou ECON 1021.

**ECON 1221** Introduction aux politiques et aux problèmes économiques mondiaux Cr.Hrs.3  
(L'ancien 018.122) Une étude de principes majeurs qui marquent l'économie mondiale et l'environnement. L'étudiant(e) qui détient les crédits du ECON 1221 (018.122) ne peut se faire créditer aucun des cours ECON 1220 (018.122), l'ancien ECON 1200 (018.120), l'ancien ECON 1201 (018.120), ECON 1010, ECON 1020, ECON 1011 ou ECON 1021.

**ECON 2311** Problèmes économiques du Canada Cr.Hrs.6  
(L'ancien 018.231) Application de la théorie économique aux problèmes actuels du Canada: les disparités régionales, l'agriculture, l'échange, la pratique concurrentielle, la propriété étrangère et l'éducation, etc. L'étudiant(e) ne peut se faire créditer à la fois le ECON 2311 (018.231) et le ECON 2310 (018.231). Préalable: une note minimale de C dans six heures-crédits au niveau 1000 en sciences économiques. Donné au l'Université de Saint-Boniface.

**ECON 2451** Théorie microéconomique et ses applications 1 Cr.Hrs.3  
(L'ancien 018.245) Théorie de la demande du consommateur, de la production et des coûts, de la demande des facteurs de production et de la structure des marchés dans une perspective historique et institutionnelle. L'étudiant(e) qui détient les crédits du ECON 2451 (018.245) ne peut se faire créditer aucun des cours ECON 2450 (018.245) ou ECON 2700 (018.270). Préalable: [une note minimale de C dans six heures-crédits au niveau 1000 en sciences économiques] ou autorisation écrit du département. Donné au l'Université de Saint-Boniface.



**ECON 2461** Théorie microéconomique et ses applications 2 Cr.Hrs.3  
(L'ancien 018.246) Théorie du marché des facteurs de production, de la distribution et de l'équilibre général, économie du bien-être et faillite des marchés, dans une perspective historique et institutionnelle. L'étudiant(e) qui détient les crédits du ECON 2461 (018.246) ne peut se faire créditer aucun des cours ECON 2460 (018.246) ou ECON 3700 (018.370). Préalable: une note minimale de C dans un des cours suivants: ECON 2450 (018.245) ou ECON 2451 (018.245) ou ECON 2700 (018.270). Donné au l'Université de Saint-Boniface.

**ECON 2471** Théorie macroéconomique et ses applications 1 Cr.Hrs.3  
(L'ancien 018.247) Étude des fluctuations dans le revenu national, la production, l'emploi la monnaie et les prix ainsi qu'étude des politiques de stabilisation, dans une perspective historique et institutionnelle. L'analyse s'effectue à partir d'un modèle macroéconomique d'une économie fermée. L'étudiant(e) qui détient les crédits du ECON 2471 (018.247) ne peut se faire créditer aucun des cours ECON 2470 (018.247) ou ECON 2800 (018.280). Préalable: [une note minimale de C dans ECON 1020 ou ECON 1021 ou l'ancien ECON 1200 (018.120) ou l'ancien ECON 1201 (018.120)] ou [une note minimale de C dans chacun de ECON 1210 (ou ECON 1211 ou l'ancien 018.121) et ECON 1220 (ou ECON 1221 ou l'ancien 018.122)]. Donné l'Université de Saint-Boniface.

**ECON 2481** Théorie macroéconomique et ses applications 2 Cr.Hrs.3  
(L'ancien 018.248) Théorie du revenu national, de l'emploi, de l'inflation, de la balance des paiements. Politiques de stabilisation et croissance économique. L'analyse s'effectue à partir d'un modèle macroéconomique d'une économie ouverte dans une perspective historique et institutionnelle. L'étudiant(e) qui détient les crédits du ECON 2481 (018.248) ne peut se faire créditer aucun des cours ECON 2480 (018.248) ou ECON 3800 (018.380). Préalable: une note minimale de C dans un des cours suivants: ECON 2470 (018.247) ou ECON 2471 (018.247) ou ECON 2800 (018.280). Donné au l'Université de Saint-Boniface.

**ECON 3301** Histoire économique du Canada Cr.Hrs.6  
(L'ancien 018.330) Étude de la croissance économique du Canada en soulignant l'influence de l'Europe et des États-Unis. L'étudiant(e) ne peut se faire créditer à la fois le ECON 3301 (018.330) et le ECON 3300 (018.330). Préalable: aucun. Donné au l'Université de Saint-Boniface.

**ECON 3641** L'économie et le système financier Cr.Hrs.3  
(L'ancien 018.364) Les flux des fonds prêtables et le système financier. L'épargne et l'investissement: l'offre et la demande d'actifs financiers des ménages et des entreprises. Théorie bancaire et intermédiaires financiers. L'arbitrage parmi les marchés financiers et les pays; politiques gouvernementales avec attention particulière au contexte canadien. L'étudiant(e) qui détient les crédits du ECON 3641 (018.364) ne peut se faire créditer aucun des cours ECON 3640 (018.364) ou FIN 3460 (009.346). Préalable: une note minimale de C dans un des cours suivants: ECON 2450 (018.245) ou ECON 2451 (018.245) ou ECON 2460 (018.246) ou ECON 2461 (018.246) ou ECON 2700 (018.270) ou ECON 3700 (018.370). Donné au l'Université de Saint-Boniface.

**ECON 3651** Théorie et politique monétaires Cr.Hrs.3  
(L'ancien 018.365) La demande et l'offre de monnaie. La structure des taux d'intérêts. Les outils de la politique monétaire. La gestion monétaire par la banque centrale et le gouvernement. L'étudiant(e) ne peut se faire créditer à la fois le ECON 3651 (018.365) et le ECON 3650 (018.365). Préalables: une note minimale de C dans un des suivants: ECON 2470 (018.247) ou ECON 2471 (018.247) ou ECON 2480 (018.248) ou ECON 2481 (018.248) ou ECON 2800 (018.280) ou ECON 3800 (018.380). Donné au l'Université de Saint-Boniface.

**ECON 3661** La pensée économique et les institutions sociales Cr.Hrs.6  
(L'ancien 018.366) L'évolution de la pensée économique dans son interaction avec l'évolution des institutions sociales et les conditions matérielles et intellectuelles des diverses époques. L'étudiant(e) ne peut se faire créditer à la fois le ECON 3661 (018.366) et le ECON 3660 (018.366). Préalable: [une note minimale de C dans six heures-crédits au niveau 1000 en sciences économiques] ou autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

### Faculté des arts-English

**ENGL 1061** Anglais langue seconde I Cr.Hrs.3  
(L'ancien 004.106) Révision et approfondissement de la grammaire anglaise. Élargissement du vocabulaire propre à la langue soutenue et sensibilisation aux pièges posés par les gallicismes d'ordre lexical et syntaxique. Étude des principes fondamentaux de rédaction: style, organisation et argumentation. Étude pratique de l'anglais parlé dans diverses situations. Expressions idiomatiques. Amélioration de la prononciation. Apprentissage des principes de base et exercices pratiques d'art oratoire en anglais. On ne peut se faire créditer le ENGL 1061 (004.106) et l'ancien 004.104. Préalable: Réussite du test de classement. Ce test est assorti d'un seuil minimum et d'un seuil maximum afin d'exclure les étudiants et étudiantes dont la connaissance de l'anglais est trop faible ou trop forte aux fins du cours. Donné au l'Université de Saint-Boniface.

**ENGL 1071** Anglais langue seconde II Cr.Hrs.3  
(Ancien 004.107) Suite d'ENGL 1061. Révision et approfondissement de la grammaire anglaise. Élargissement du vocabulaire propre à la langue soutenue et sensibilisation aux pièges posés par les gallicismes d'ordre lexical et syntaxique. Étude des principes fondamentaux de rédaction, notamment sur le plan du style, l'usage idiomatique, et le vocabulaire. Étude pratique de l'anglais parlé dans diverses situations. Expressions idiomatiques. Amélioration de la prononciation. Apprentissage des principes de base et exercices pratiques de l'art oratoire en anglais. On ne peut se faire créditer ENGL 1071 (004.107) et l'ancien 004.105. Une note minimale de C (60%) est requise pour réussir ENGL 1071. Préalable: [une note minimale de C dans ENGL 1061 (ancien 004.106) ou l'ancien 004.104] ou la recommandation du Service de perfectionnement linguistique.

**ENGL 1201** Representative Literary Works Cr.Hrs.6  
(L'ancien 004.120) An introduction to the study of literature, with emphasis on the development of reading and writing skills. Poetry, prose and drama from various historical periods. Texts for each section will be announced. Students may not hold credit for ENGL 1201 (004.120) and any of:



ENGL 1200 (004.120) or the former 004.124. English 40S or the former English 300 are strongly recommended, but English 40G or the former 301 or 305 will also be accepted. Given at l'Université de Saint-Boniface.

**ENGL 1301** Literature Since 1900 Cr.Hrs.6

(L'ancien 004.130) An introduction to the study of literature, with emphasis on the development of reading and writing skills. Poetry, prose and drama from Canada, Britain, the United States and other countries. Texts for each section will be announced. Students may not hold credit for ENGL 1301 (004.130) and any of: ENGL 1300 (004.130) or the former 004.126. English 40S or the former English 300 are strongly recommended, but English 40G or the former 301 or 305 will also be accepted. Given at l'Université de Saint-Boniface.

**ENGL 2001** Intermediate Writing and Research Cr.Hrs.6

(L'ancien 004.200) Designed to teach students how to read, write, and research at the university level, this course stresses effective expository writing, prose reading, and research skills. There is no prerequisite for this course. Note: Credit in ENGL 2001 (004.200) is acceptable toward a degree in Arts or Science, but does not satisfy the humanities requirement in the Faculty of Arts. It may not be offered for credit in the 30 hours for a Major (General) or the 18 hours for a Minor but may be offered for credit in the 48 hours for the Major (Advanced). Given at l'Université de Saint-Boniface.

**ENGL 2071** Literature of the Sixteenth Century Cr.Hrs.6

(L'ancien 004.207) A survey of poetry, prose and drama by major and minor writers in historical context. Students may not hold credit for ENGL 2071 (004.207) and any of: ENGL 2070 (004.207) or the former 004.210. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130) or the former 004.126] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)]. Given at l'Université de Saint-Boniface.

**ENGL 2091** Literature of the Seventeenth Century Cr.Hrs.6

(L'ancien 004.209) A survey of poetry, prose and drama by major and minor writers in historical context. Students may not hold credit for ENGL 2091 (004.209) and any of: ENGL 2090 (004.209) or the former 004.215. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130) or the former 004.126] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)]. Given at l'Université de Saint-Boniface.

**ENGL 2161** British Literature since 1900 Cr.Hrs.6

(L'ancien 004.216) A survey of poetry, prose and drama by major and minor writers in historical context. Students may not hold credit for ENGL 2161 (004.216) and any of: ENGL 2160 (004.216) or the former 004.285. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130) or the former 004.126] or [a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)]. Given at l'Université de Saint-Boniface.

**ENGL 2961** Drama 1 Cr.Hrs.3

(L'ancien 004.296) An introduction to dramatic forms and conventions. Prerequisite: [a grade of "C" or better in ENGL 1200 (004.120) or ENGL 1201 (004.120) or ENGL 1300 (004.130) or ENGL 1301 (004.130) or the former 004.126] or

[a grade of "C" or better in each of ENGL 1310 (004.131) and ENGL 1340 (004.134)]. Given at l'Université de Saint-Boniface.

**ENGL 3011** Shakespeare Cr.Hrs.6

(L'ancien 004.301) Critical study of the works of this author, including historical context. Students may not hold credit for ENGL 3011 (004.301) and any of: ENGL 3010 (004.301) or the former 004.310. Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. Given at l'Université de Saint-Boniface.

**ENGL 3141** Studies in the Victorians Cr.Hrs.3

(L'ancien 004.314) Students may not hold credit for ENGL 3141 (004.314) and any of: ENGL 3140 (004.314) or the former 004.329. Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed . As the course content will vary from year to year, students may take this course more than once for credit. Given at l'Université de Saint-Boniface.

**ENGL 3271** Studies in Canadian Literature Cr.Hrs.3

(L'ancien 004.327) Students may not hold credit for ENGL 3271 (004.327) and any of: ENGL 3270 (004.327) or the former 004.388. Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. As the course content will vary from year to year, students may take this course more than once for credit.

**ENGL 3671** Studies in the Novel Cr.Hrs.6

(L'ancien 004.367) Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. Students may not hold credit for both ENGL 3671 (004.367) and ENGL 3670 (004.367). NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed . As the course content will vary from year to year, students may take this course more than once for credit. Given at l'Université de Saint-Boniface.

**ENGL 3961** Drama 2 Cr.Hrs.3

(L'ancien 004.396) Advanced study of selected topics. Students may not hold credit for ENGL 3961 (004.396) and any of: ENGL 3960 (004.396) or the former 004.297. Prerequisite: a grade of "C" or better in six hours of English at the 2000 level. NOTE: The content of this course will vary from year to year. Students are asked to consult the Department of English, Film, and Theatre Handbook for detailed . Given at l'Université de Saint-Boniface.

## Faculté des arts: Français-1000 Level

**FRAN 1001** Grammaire de l'écrit Cr.Hrs.6

(L'ancien 144.100) Perfectionnement du français par l'entremise d'activités de compréhension et de production de textes divers menant à une étude approfondie de la grammaire, à l'enrichissement du vocabulaire et à un aperçu de la stylistique interne. Développement d'habitudes de travail telles que l'utilisation des outils de rédaction et l'autocorrection. Mise en pratique des notions apprises dans le cours et activités orales dans le cadre du laboratoire obligatoire. Donné au l'Université de Saint-Boniface.



**FRAN 1021** L'art de parler Cr.Hrs.3  
(L'ancien 144.102) Correction et amélioration du français parlé (structures de phrases, aspects grammaticaux d'erreurs courantes). Distinction entre la langue parlée et la langue écrite. Prise de conscience des différents registres de la langue en fonction des différentes situations de communication. Apprentissage des techniques de l'expression orale: exposé, débat, discours. Donné au l'Université de Saint-Boniface.

**FRAN 1071** Lectures dirigées Cr.Hrs.3  
(L'ancien 144.107) Lecture et analyse de divers textes d'actualité, accompagnées d'exercices de compréhension et de rédaction. Donné au l'Université de Saint-Boniface.

**FRAN 1091** Rédaction universitaire Cr.Hrs.3  
(L'ancien 144.109) Initiation aux méthodes de travail universitaire : les techniques du résumé, du compte rendu de la dissertation. Préalable : une note minimale de C est requise dans FRAN 1001 pour les étudiants et étudiantes qui l'auront suivi.

**FRAN 1111** Grammaire et laboratoire Cr.Hrs.3  
(L'ancien 144.111) Approfondissement des notions de la grammaire. Une attention particulière sera accordée à l'analyse de la phrase. Donné au l'Université de Saint-Boniface.

### Faculté des arts: Français-2000 Level

**FRAN 2531** Introduction au théâtre 1 Cr.Hrs.3  
(L'ancien 144.253) Étude de plusieurs oeuvres, des principaux aspects techniques et de diverses théories dramatiques - du théâtre grec au théâtre de XIXe siècle. Préalable: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un cours choisi parmi les suivants: FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2541** Introduction au théâtre 2 Cr.Hrs.3  
(L'ancien 144.254) Étude de plusieurs oeuvres, des principaux aspects techniques et de diverses théories dramatiques. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un cours choisi parmi les suivants: FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2631** Poésie et chanson dans la littérature française Cr.Hrs.3  
(L'ancien 144.263) Étude des étapes de la poésie françaisainsi que des liens qu'elle a eues avec la chanson à travers les âges. Une attention particulière sera accordée aux époques où les deux formes sont étroitement liées ou inséparables. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un cours choisi parmi les suivants: FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2641** Le discours amoureux dans la littérature française Cr.Hrs.3  
(L'ancien 144.264) Étude des diverses formes du discours amoureux et de ses stratégies rhétoriques et linguistiques dans la littérature romanesque française. Préalables: [une

note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un cours choisi parmi les suivants: FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2651** La nature dans la littérature française Cr.Hrs.3  
(L'ancien 144.265) Étude de diverses attitudes et réflexions associées à l'idée de nature. Un parcours historique qui tiendra compte de l'évolution des thèmes, permettra de suivre la filiation du discours ininterrompu sur les rapports, réels ou mythiques, que l'homme entretient avec la nature. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un cours choisi parmi les suivants: FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2661** La fantaisie dans la littérature française Cr.Hrs.3  
(L'ancien 144.266) Aperçu historique des diverses formes que la fantaisie a prises dans la littérature française du XVIIe au XVIIIe siècles. Étude approfondie des courants fantaisistes qui ont animé les œuvres littéraires aux XIXe et XXe siècles. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [un course choisi parmi les suivants: FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2681** Civilisation française Cr.Hrs.3  
(L'ancien 144.268) Étude des éléments représentatifs due deuples français: grands courants de pensée, mouvements de l'histoire, é de la société et de la mentalité. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un des FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2831** L'individu et le pays Cr.Hrs.3  
(L'ancien 144.283) Un aperçu général de la production littéraire au Canada français depuis ses origines à nos jours, d'après une étude de textes ayant comme thème: l'individu et le pays. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un des FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2841** La quête du bonheur Cr.Hrs.3  
(L'ancien 144.284) Un aperçu général de la production littéraire au Canada français depuis ses origines à nos jours, d'après une étude de textes ayant comme thèmes la quête du bonheur. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un des FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2851** Le folklore et la littérature orale Cr.Hrs.3  
(L'ancien 144.285) Une étude des moeurs et coutumes au Canada français: une attention particulière sera accordée aux proverbes, récits et chansons traditionnels. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un des FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.



**FRAN 2861** L'influence de la littérature orale Cr.Hrs.3 (L'ancien 144.286) Ce cours proposera l'étude de la littérature orale fixée (contes, légendes, mythes) ainsi que de textes modernes du XXe siècle (romans, poésie, nouvelles), produits au Canada français qui illustrent les influences certaines de cette littérature orale. En étudiant les contes, légendes et mythes, venant surtout du Canada, l'étudiant(e) verra comment cette source peut nourrir la veine inspiratrice d'un auteur. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un des FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2881** Civilisation canadienne-française Cr.Hrs.3 (L'ancien 144.288) Étude des éléments représentatifs du peuple canadien-français: grands courants de pensées, mouvements de l'histoire, évolution de la société et de la mentalité. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un des FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Donné au l'Université de Saint-Boniface.

**FRAN 2911** Procédés d'écriture Cr.Hrs.3 (L'ancien 144.291) Étude des diverses formes de la communication: non verbale, verbale, orale, écrite. Une attention particulière sera accordée au contexte de la communication: registres de langue, ambiguïtés de langage et polysémie de l'expression. Préalables: [une note minimale de C dans le FRAN 1091 (144.109)] et [une note minimale de C dans un des FRAN 1021 (144.102) ou FRAN 1071 (144.107) ou FRAN 1111 (144.111)]. Note: le FRAN 1111 (144.111) est fortement recommandé. Donné au l' Université de Saint-Boniface.

**FRAN 2921** Cours de phonétique française Cr.Hrs.3 (L'ancien 144.292) Étude approfondie du système phonétique et de la transcription phonétique de la langue française. Exercices systématiques portant sur l'articulation, l'accent, l'intonation, le rythme, la pause, la liaison et l'éllision. Préalable: une note minimale de C dans le FRAN 1111 (144.111). Donné au l'Université de Saint-Boniface.

**FRAN 2931** Initiation à la linguistique Cr.Hrs.3 (L'ancien 144.293) Dégagement des instruments linguistiques nécessaires à la compréhension des mécanismes de la langue française. Description des structures internes pour que l'étudiant(e) puisse prendre connaissance de ses éléments constitutifs. Préalable: une note minimale de C dans le FRAN 1111 (144.111). Donné au l'Université de Saint-Boniface.

**FRAN 2941** Structures du français contemporain Cr.Hrs.3 (L'ancien 144.294) Étude systématique de la syntaxe du français dans la perspective de la linguistique générative et transformationnelle. Préalable: une note minimale de C dans le FRAN 1111 (144.111). Donné au l'Université de Saint-Boniface.

**FRAN 2991** Création de textes variés Cr.Hrs.3 (L'ancien 144.299) Pratique des divers procédés d'écriture présentés au FRAN 2911 (144.291). Rédaction de textes argumentatifs, incitatifs, expressifs, narratifs, descriptifs. Préalable: une note minimale de C dans le FRAN 2911 (144.291). Donné au l'Université de Saint-Boniface.

## Faculté des arts: Français-3000 Level

**FRAN 3531** Le théâtre québécois Cr.Hrs.3 (L'ancien 144.353) Aperçu historique et étude de théâtre québécois de Lescarbot à Tremblay. Étude des oeuvres de Gratien Gélinas, Marcel Dubé, Michel Tremblay, etc. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000. Donné au l'Université de Saint-Boniface.

**FRAN 3541** Le théâtre de l'Ouest Cr.Hrs.3 (L'ancien 144.354) Étude d'oeuvres d'auteurs franco-manitobains, tels que Auger, Dorge, Ferland, etc. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000. Donné au l'Université de Saint-Boniface.

**FRAN 3631** Les romanciers du XXe siècle Cr.Hrs.3 (L'ancien 144.363) Étude de romans ayant le plus marqué le paysage littéraire du XXe siècle. Auteurs tels que: Gide, Colette, Sartre, de Beauvoir, Duras. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000. Donné au l'Université de Saint-Boniface.

**FRAN 3641** Le rire dans la littérature française Cr.Hrs.3 (L'ancien 144.364) Étude du développement de la veine comique à travers la littérature française, de son origine au Moyen-Age jusqu'aux temps modernes en passant par ses manifestations au cours des différents siècles. Préalable: un cours (3 crédits) avec une note minimale de C de littérature de niveau 2000. Donné au l'Université de Saint-Boniface.

**FRAN 3651** Littérature et vision tragique du monde Cr.Hrs.3 (L'ancien 144.365) Étude du développement de la veine tragique à travers la littérature française, de son origine au Moyen-Age jusqu'aux temps modernes en passant par ses manifestations au cours des différents siècles. Préalable: un cours (3 crédits) avec une note minimale de C de littérature de niveau 2000. Donné au l'Université de Saint-Boniface.

**FRAN 3661** L'esprit de la révolution française Cr.Hrs.3 (L'ancien 144.366) Le maintien des formes classiques qui atteignent, au début du XVIIIe siècle, un summum d'élégance et de raffinement et l'apparition, d'une part, des idées nouvelles qui entraîneront la chute de l'ancien régime et, d'autre part, d'une sensibilité annonciatrice d'un âge nouveau. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000. Donné au l'Université de Saint-Boniface.

**FRAN 3671** Études de poésie Cr.Hrs.3 (L'ancien 144.367) Étude des formes poétiques de la Renaissance (Marot, poètes de la Pléiade, poètes baroques), du Romantisme (Lamartine, Musset, Vigny, Hugo), du Parnasse (Gautier) et du début du Symbolisme (Baudelaire). Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000. Donné au l'Université de Saint-Boniface.

**FRAN 3681** Thèmes romantiques Cr.Hrs.3 (L'ancien 144.368) Les origines et les caractéristiques du Romantisme. Sa persistance et ses déboires à travers les grands mouvements littéraires du XIXe siècle - Réalisme, Naturalisme, Parnasse et Symbolisme. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000. Donné au l'Université de Saint-Boniface.



**FRAN 3731** Initiation aux littératures francophones Cr.Hrs.3 (L'ancien 144.373) Introduction générale portant sur l'ensemble de la production littéraire dans les pays francophones autres que le Canada français et la France. Étude des contextes socio-historiques qui ont favorisé l'épanouissement de cette littérature. Étude de thèmes majeurs, de structures et d'esthétiques particulières retrouvées dans une sélection d'oeuvres choisies. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 3831** L'époque de la contestation Cr.Hrs.3 (L'ancien 144.383) Étude approfondie de la société québécoise et des signes précurseurs de cet éclatement qui eut lieu au début des années 60 appelé la Révolution tranquille. Une attention particulière sera accordée à la poésie, la chanson, les nouvelles et aux essais produits pendant cette période de revendication populaire. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000. Donné au l'Université de Saint-Boniface.

**FRAN 3841** La révolution tranquille et le roman Cr.Hrs.3 (L'ancien 144.384) Étude approfondie de la genèse du roman et à l'explosion des nouvelles formes de littérature depuis la Révolution tranquille au Québec. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000. Donné au l'Université de Saint-Boniface.

**FRAN 3851** Littérature de l'Ouest: Poésie, nouvelles Cr.Hrs.3 (L'ancien 144.385) Une étude de la poésie et des nouvelles produites dans l'Ouest francophone du Canada depuis le siècle dernier: l'étudiant(e) pourra apprécier l'évolution des styles et des thèmes par l'analyse de textes choisis. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000. Donné au l'Université de Saint-Boniface.

**FRAN 3861** Littérature de l'Ouest: Roman Cr.Hrs.3 (L'ancien 144.386) Une étude des romans produits dans l'Ouest francophone du Canada depuis le siècle dernier. L'étudiant(e) suivra l'évolution du genre romanesque de style et d'inspiration classique et traditionnelle jusqu'à l'expression moderne et post-moderne des écrivains franco-canadiens de l'Ouest. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000.

**FRAN 3911** Procédés et analyses stylistiques Cr.Hrs.3 (L'ancien 144.391) Étude détaillée de la structure des textes et des procédés stylistiques mis en oeuvre par des écrivains et des journalistes. Une place importante sera accordée à la presse, à la publicité et aux réalités sociales les plus proches des étudiants. Préalable: une note minimale de C dans le FRAN 2911 (144.291). Donné au l'Université de Saint-Boniface.

**FRAN 3931** Lexicologie et lexicographie Cr.Hrs.3 (L'ancien 144.393) Objectifs de la lexicologie; étude des unités lexicales dans le cadre de la théorie linguistique; analyses lexicales à partir de textes choisis. Problèmes théoriques et pratiques de la lexicographie. Préalable: une note minimale de C dans le FRAN 2931 (144.293). Donné au l'Université de Saint-Boniface.

**FRAN 3941** Syntaxe du français contemporain Cr.Hrs.3 (L'ancien 144.394) Étude des modèles fonctionnel, distributionnel et transformationnel de la syntaxe. Approfondissement du modèle transformationnel par

l'analyse des transformations binaires. Préalable: une note minimale de C dans le FRAN 2941 (144.294). Donné au l'Université de Saint-Boniface.

**FRAN 3951** Évolution de la langue Cr.Hrs.3 (L'ancien 144.395) Place du français dans le tableau des grandes familles de langues. Origines de la langue française et sa naissance. Les dialectes de l'ancien français. Étude de quelques textes illustrant l'évolution du français du Moyen-Age au XVIIe siècle. Préalable: une note minimale de C dans le FRAN 2911 (144.291) ou FRAN 2931 (144.293). Donné au l'Université de Saint-Boniface.

**FRAN 3991** Création littéraire: conte et nouvelle Cr.Hrs.3 (L'ancien 144.399) Création de contes, de nouvelles et d'autres textes fictifs à partir d'une étude détaillée des genres narratifs. Une partie du cours sera consacrée à l'étude des divers types de phrase et des contextes où ils pourraient être employés. Préalable: une note minimale de C dans le FRAN 2911 (144.291). Donné au l'Université de Saint-Boniface.

## Faculté des arts: Français-4000 Level

**FRAN 4011** Sociocritique Cr.Hrs.3 (L'ancien 144.401) Initiation aux méthodes critiques du XXe siècle se fondant sur les principes de la sociologie moderne. Préalables: une note minimale de C dans le FRAN 2911 (144.291) et un cours (3 crédits) de littérature de niveau 2000, 3000 ou 4000. Donné au l'Université de Saint-Boniface.

**FRAN 4021** Critique féministe Cr.Hrs.3 (L'ancien 144.402) Étude de différents courants de la critique féministe, en rapport avec les théories de la critique littéraire moderne. Problématique d'une écriture au féminin et d'une lecture féministe d'oeuvres littéraires, françaises et québécoises. Préalables: une note minimale de C dans le FRAN 2911 (144.291) et un cours (3 crédits) de littérature de niveau 2000, 3000 ou 4000. Donné au l'Université de Saint-Boniface.

**FRAN 4061** La femme dans la littérature Cr.Hrs.3 (L'ancien 144.406) Ce cours portera sur le rôle de la femme dans la littérature. La littérature française et la littérature canadienne-française serviront de principaux modèles. Le cours touchera trois aspects différents concernant le rôle des femmes dans la littérature: les auteurs féminins, l'image de la femme dans des oeuvres écrites par des auteurs masculins et la question d'une typologie féminine. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4071** Sujets particuliers Cr.Hrs.3 (L'ancien 144.407) Le contenu de ce cours variera d'année en année selon les besoins des étudiant(e)s et, selon la spécialité du professeur. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4081** Littérature et cinéma Cr.Hrs.3 (L'ancien 144.408) Étude d'oeuvres littéraires et de leur réalisation cinématographique conduisant à un examen de problèmes de l'adaptation à l'écran d'une oeuvre littéraire ainsi qu'à une comparaison des techniques d'expression des deux arts et à une réflexion sur la création dans les deux



langages spécifiques, le langage textuel et le langage visuel. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4551** L'âge d'or du théâtre français Cr.Hrs.3 (L'ancien 144.455) Étude thématique, dramatique et esthétique de six pièces représentatives de l'école classique du théâtre français (XVIIe siècle). Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4561** Le théâtre français du XVIIIe siècle Cr.Hrs.3 (L'ancien 144.456) Étude du renouveau des formes dramatiques dans quelques oeuvres du théâtre français du XVIIIe siècle. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4591** Création littéraire: théâtre Cr.Hrs.3 (L'ancien 144.459) Étude des procédés d'écriture d'une pièce de théâtre. Ateliers d'écriture, débouchant sur la création d'une pièce. Préalable: une note minimale de C dans le FRAN 2911 (144.291) et un cours (3 crédits) de théâtre de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4631** Métamorphoses du roman Cr.Hrs.3 (L'ancien 144.463) Les origines du roman et la correspondance entre les différentes structures romanesques et les structures sociales sous l'Ancien Régime. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4641** Réalisme et engagement Cr.Hrs.3 (L'ancien 144.464) Les rapports du roman avec la société de l'histoire au XIXe et XXe siècles. Étude de la peinture de la société dans le roman. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4651** Poésie féminine Cr.Hrs.3 (L'ancien 144.465) Étude de la poésie au féminin, des origines à nos jours. Interrogation sur une spécificité de l'écriture féminine à travers les âges, au delà des courants idéologiques de l'époque à laquelle appartiennent les auteures. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4661** Nouveaux visages du roman Cr.Hrs.3 (L'ancien 144.466) Étude détaillée de quelques oeuvres romanesques produites depuis le début des années 1980 (romans de Le Clézio, Perec, Duras, Sarraute, etc.). Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4731** Littérature africaine Cr.Hrs.3 (L'ancien 144.473) Une introduction à la littérature des pays africains francophones. Études de textes qui ont marqué le XXe siècle, avec une accentuation sur les productions après l'ère des indépendances. Préalable: une note minimale de C dans le FRAN 3731 (144.373). Donné au l'Université de Saint-Boniface.

**FRAN 4741** Littérature maghrébine Cr.Hrs.3 (L'ancien 144.474) Étude d'une sélection d'oeuvres francophones choisies et écrites par les auteurs connus des pays maghrébains. Certains aspects particuliers à cette littérature seront abordés: histoire, culture, thèmes, structures, langue, technique et style. Préalable: une note minimale de C dans le FRAN 3731 (144.373). Donné au l'Université de Saint-Boniface.

**FRAN 4751** Littérature antillaise Cr.Hrs.3 (L'ancien 144.475) Introduction générale à la littérature antillaise avec une mise en situation historique et socio-culturelle. Étude des thèmes majeurs, des particularités stylistiques dans quelques oeuvres choisies parmi les plus représentatives des tendances littéraires des XIXe et XXe siècles. Préalable: une note minimale de C dans le FRAN 3731 (144.373). Donné au l'Université de Saint-Boniface.

**FRAN 4831** Littérature de l'Acadie et des Cajuns Cr.Hrs.3 (L'ancien 144.483) Introduction portant sur l'ensemble de la littérature acadienne et cajune (de la Louisiane) avec une mise en contexte géographique, historique et socio-culturelle. Étude thématique stylistique et formelle de quelques oeuvres représentatives des tendances littéraires des XIXe et XXe siècles. Préalable: avoir suivi un cours (3 crédits) de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4841** Le roman du terroir Cr.Hrs.3 (L'ancien 144.484) Aperçu général de l'histoire de la littérature canadienne-française depuis la fin du XIXe siècle jusqu'en 1945. Études d'oeuvres représentatives de chacune des périodes considérées (roman d'aventures, roman du terroir, roman régionaliste, etc.). Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l' Université de Saint-Boniface.

**FRAN 4851** Du classicisme à l'exotisme Cr.Hrs.3 (L'ancien 144.485) Une initiation à la poésie et à la chanson canadienne-française depuis leurs origines jusqu'à la Deuxième Guerre mondiale. Une attention particulière sera accordée à l'étude de l'évolution des styles et des thèmes du classicisme vers l'exotisme. Préalable: un cours (3 crédits) avec une note minimale de C de niveau 2000 ou 3000. Donné au l'Université de Saint-Boniface.

**FRAN 4921** Les parlers régionaux Cr.Hrs.3 (L'ancien 144.492) À travers des documents audio-visuels et écrits, étude des principales caractéristiques phonétiques, syntaxiques, morphologiques, sémantiques et lexicales de certaines variantes régionales du français (ex. de France, d'Afrique, des Antilles, d'Amérique du Nord). Préalables: une note minimale de C dans FRAN 2911 (144.291) et FRAN 2931 (144.293). Donné au l'Université de Saint-Boniface.

**FRAN 4931** La langue dans la littérature Cr.Hrs.3 (L'ancien 144.493) Étude détaillée de textes littéraires allant du XVIII au XXe siècle et visant l'appréciation des différents styles et l'initiation aux différentes méthodes d'analyse de textes. Préalable: une note minimale de C dans le FRAN 2911 (144.291) ou FRAN 2931 (144.293). Donné au l'Université de Saint-Boniface.

**FRAN 4971** Sociolinguistique Cr.Hrs.3 (L'ancien 144.497) Initiation aux rapports que l'on peut établir entre la langue et la société, aux domaines d'étude et aux méthodes de la sociolinguistique. Préalable: une note



minimale de C dans le FRAN 2931 (144.293). Donn  au l'Universit  de Saint-Boniface.

**FRAN 4991** Cr ation litt raire: Po sie Cr.Hrs.3 (L'ancien 144.499) Mise en pratique de techniques de cr ation po tique ( tude des rythmes, des images, des sonorit s, etc.) pour la r alisation d'oeuvres po tiques originales. Pr alables: une note minimale de C dans le FRAN 2911 (144.291) et un cours (3 cr dits) de po sie de niveau 2000 ou 3000. Donn  au l'Universit  de Saint-Boniface.

## Facult  des arts-G ographie

**GEOG 1201** Introduction   la g ographie Cr.Hrs.6 (L'ancien 053.120)  tude des aspects physique et humain du globe et de leur interd pendance. L' tudiant ne peut se faire cr diter avec GEOG 1200(053.120), ou GEOG 1290ou GEOG 1291(053.129), ou GEOG 1280ou GEOG 1281(053.128).Donn  au l' Universit  de Saint-Boniface.

**GEOG 1281** Introduction   la g ographie humaine Cr.Hrs.3 (L'ancien 053.128)  tude des divers aspects du milieu humain: la population, l'habitat et les ressources naturelles. L' tudiant ne peut se faire cr diter avec le GEOG 1280, ou GEOG 1200ou GEOG 1201(053.120). Donn  au l'Universit  de Saint-Boniface.

**GEOG 1291** Introduction   la g ographie physique Cr.Hrs.3 (L'ancien 053.129)  tude des divers aspects de l'environnement physique: le climat, le relief, les sols et la v g tation. L' tudiant ne peut se faire cr diter avec GEOG 1290(053.129), ou GEOG 1200ou GEOG 1201(053.120). Donn  au l'Universit  de Saint-Boniface.

**GEOG 2211** G ographie  conomique (HS) Cr.Hrs.6 (L'ancien 053.221) Introduction   l'expression spatiale des activit s  conomiques. Le cours traite du concept de ressource, de la localisation et de l'utilisation des ressources naturelles, des th ories sur les facteurs de localisation des activit s industrielles, de l'agriculture et des fondements du d veloppement r gional. Donn  au l'Universit  de Saint-Boniface. Pr alable: une note minimale de C dans un minimum de 3 heures-cr dits de g ographie de niveau 1000 ou l'autorisation  crite du professeur.

**GEOG 2221** Introduction   la cartographie et analyse de la carte num rique (TS) Cr.Hrs.6 Deux heures de laboratoire par semaine. Une  tude de la production et de l'analyse de cartes, en tenant compte de la cartographie assist e par ordinateur.Ce cours est une introduction aux techniques de l'expression cartographique et   l'utilisation des donn es de la t l d tection il porte une attention sp ciale   la repr sentation pr cise des statistiques.

**GEOG 2481** G ographie de la population (HS) Cr.Hrs.6 (L'ancien 053.248) Une  tude des facteurs exer ant un contr le sur l'ampleur et la r partition des populations humaines; l'analyse des variations de f condit , de mortalit  et de mobilit  ainsi que leurs causes et cons quences. Donn  au l'Universit  de Saint-Boniface. Pr alable: une note minimale de C dans un minimum de 3 heures-cr dits de g ographie de niveau 1000 ou l'autorisation  crite du

professeur.

**GEOG 2541** M t orologie et climatologie (PS) Cr.Hrs.3 (L'ancien 053.254)  tude de la nature, des contr les et des observations du temps et des variations spatio-temporelles du climat. Donn  au l'Universit  de Saint-Boniface. Pr alable: une note minimale de C dans un minimum de 3 heures-cr dits de g ographie de niveau 1000, ou l'autorisation  crite du professeur.

**GEOG 2551** G omorphologie (PS) Cr.Hrs.3 (L'ancien 053.255) Vue d'ensemble des reliefs vari s de la surface du globe et des processus g omorphologiques responsables de leur formation. (Laboratoire hebdomadaire). Donn  au l'Universit  de Saint-Boniface. Pr alable: une note minimale de C dans un minimum de 3 heures-cr dits de g ographie de niveau 1000, ou l'autorisation  crite du professeur.

**GEOG 2651** G ographie politique I Cr.Hrs.3 (L'ancien 053.265)  tude des relations qui existent entre l' tat et son territoire: sa localisation, ses fronti res et ses disparit s r gionales. L' tudiant ne peut se faire cr diter avec le GEOG 2430 (053.243). Donn  au l'Universit  de Saint-Boniface. Pr alable: une note minimale de C dans un minimum de 3 heures-cr dits de g ographie de niveau 1000, ou l'autorisation  crite du professeur.

**GEOG 2661** G ographie politique II Cr.Hrs.3 (L'ancien 053.266)  tude des rapports de force entre les  tats et leurs relations   l'espace, aux ressources,   la population et aux groupes ethniques. L' tudiant ne peut se faire cr diter avec le GEOG 2430 (053.243). Donn  au l'Universit  de Saint-Boniface. Pr alable: une note minimale de C dans le GEOG 2651 (053.265), ou l'autorisation  crite du professeur.

**GEOG 3411** G ographie de l'eau Cr.Hrs.3 (L'ancien 053.341) L'eau,  l ment essentiel de la g ographie physique: bilan d'eau, cycle hydrologique, infiltration, percolation et  coulement, eaux souterraines, hydrologie fluviale et marine: course d'eau, lacs et oc ans, environnement. Donn  au l'Universit  de Saint-Boniface. Pr alable: une note minimale de C dans le GEOG 1290 ou GEOG 1291 (053.129), ou l'autorisation  crite du professeur.

**GEOG 3421** L'eau, enjeu g ostrat gique Cr.Hrs.3 (L'ancien 053.342) L'eau, un enjeu strat gique d'importance: un survol historique des enjeux li s   l'eau et les enjeux actuels, la r partition in gale de la ressource .eau. et son partage  quitable, les solutions techniques,  conomiques, institutionnelles et juridiques envisag es et le droit international. Donn  au l'Universit  de Saint-Boniface. Pr alable: une note minimale de C dans le GEOG 1280 ou GEOG 1281 (053.128), et les deux GEOG 2651 (053.265) et GEOG 2661 (053.266) (ou le GEOG 2430 (053.243)), ou l'autorisation  crite du professeur

**GEOG 3431** G ographie de Canada (A) Cr.Hrs.3  tude du Canada par r gions. L' tudiant ne peut se faire cr diter   la fois le GEOG 2560 (053.256) ou le GEOG 2570 (053.257) et le GEOG 3700 (053.370). Donn  au l'Universit  de Saint-Boniface. Pr alable: une note minimale de C dans un minimum de 6 heures-cr dits de g ographie de niveau 1000 ou l'autorisation  crite du professeur.

**GEOG 3481** Particularités de la géographie du Canada

(A) Cr.Hrs.3

(L'ancien 053.348) Ce cours aborde des problèmes spécifiques la géographie canadienne: régions, urbanisme, milieu rural, ressources, utilisation du sol. Donné au l'Université de Saint-Boniface. Préalable: une note minimale de C dans un des cours suivants: GEOG 2560 ou (053.256), GEOG 2570 (053.257) ou GEOG 3431 (053.343), ou l'autorisation écrite du professeur.

**GEOG 3501** Géographie de l'Europe (A) Cr.Hrs.6

(L'ancien 053.350) Vue générale sur la géographie du continent européen et plus spécifiquement sur l'Union européenne. L'accent sera placé sur quelques pays. Donné au l'Université de Saint-Boniface. Préalable: une note minimale de C dans un minimum de 6 heures-crédits de géographie de niveau 1000, ou l'autorisation écrite du professeur

**GEOG 3591** Géographie des pays en voie de développement (A) Cr.Hrs.6

(L'ancien 053.359) Le thème principal sera la modernisation des pays en voie de développement: exemples de l'Asie méridionale et de l'Afrique noire. Seront étudiés les aspects suivants: le développement historique, les problèmes démographiques et sociaux, l'utilisation du sol et la conservation des ressources, l'urbanisation et l'industrialisation. L'étudiant ne peut se faire créditer à la fois le GEOG 3590 (053.359). Donné au l'Université de Saint-Boniface. Préalable: une note minimale de C dans un minimum de 6 heures-crédits de géographie niveau 1000, ou l'autorisation écrite du professeur.

**GEOG 3701** Canada : Évolution de l'écoumène (A) Cr.Hrs.6 Étude de l'impact qu'a eu l'arrivée des Européens, au début du XVIIe siècle, sur les différents aspects de l'environnement canadien; évolution de la nature de l'utilisation de l'espace canadien. L'étudiant ne peut se faire créditer à la fois GEOG 3701 et GEOG 3700. Préalable : une note minimale de C dans 6 heures-crédits de géographie de niveau 1000 ou l'autorisation du professeur.

**GEOG 3761** Sujets particuliers en géographie Cr.Hrs.6

(L'ancien 053.376) Le contenu de ce cours variera d'année en année selon les besoins des étudiants et la spécialité du professeur. Donné au l'Université de Saint-Boniface. Préalable: l'autorisation écrite du professeur.

**GEOG 3771** Sujets particuliers en géographie Cr.Hrs.3

Le contenu de ce cours variera d'année en année selon les besoins des étudiants et la spécialité du professeur. Préalable: l'autorisation écrite du professeur.

**GEOG 3821** Les territoires de la francophonie mondiale (A, HS) Cr.Hrs.3

(L'ancien 053.382) La mise en place des espaces francophones à travers le monde: le développement et l'éclatement des empires français et belge. La territorialité et l'identité au sein de la francophonie internationale. Répartition géographique et développement institutionnel. Ententes politiques et aspirations territoriales. Donné au l'Université de Saint-Boniface. Préalable: Un note minimale de C dans un minimum de 6 heures-crédits dans un cours de géographie de niveau 1000.

**GEOG 3831** L'espace francophone panaméricain (A, HS) Cr.Hrs.3

(L'ancien 053.383) L'étude des communautés francophones des Amériques dans le temps et dans l'espace. La mise en place de la francophonie panaméricaine et les circonstances de son éclatement. Ses enjeux économiques, sociaux, politiques et culturels. Les infrastructures, les institutions et les réseaux francophones. Donné au l'Université de Saint-Boniface. Préalable: une note minimale de C dans le GEOG 3821 (053.382).

**GEOG 3841** Les espaces francophones de l'Afrique, de l'Asie et de l'Océanie (A, HS) Cr.Hrs.3

(L'ancien 053.384) L'étude des communautés francophones africaines, asiatiques et océaniques. Les étapes de la colonisation et de la décolonisation, l'évolution vers l'indépendance et l'accession au statut d'État souverain. La mise en place des infrastructures, des institutions et des réseaux francophones. Donné au l'Université de Saint-Boniface. Préalable: une note minimale de C dans GEOG 3821 (053.382).

**Faculté des arts-German****GRMN 1121** Introduction à l'Allemand Cr.Hrs.6

(L'ancien 008.112) Trois heures de cours plus une heure de travaux dirigés et une heure de conversation par semaine. Destiné à ceux qui n'ont aucune connaissance de l'allemand ou qui n'en ont qu'une connaissance minimale. Initiation à la grammaire fondamentale avec l'accent sur le développement d'aptitudes à la lecture et à la conversation. La réussite à ce cours permet de s'inscrire aux GRMN 2100 (008.210) ou GRMN 2101 (008.210). On ne peut se faire créditer les GRMN 1121 (008.112) et GRMN 1120 (008.112). Si l'on a déjà obtenu crédit pour le cours d'allemand de secondaire 4 ou l'équivalent ou pour le GRMN 2100 (008.210) ou GRMN 2101 (008.210), on ne peut s'inscrire à ce cours. Donné au l'Université de Saint-Boniface.

**GRMN 2101** Allemand intermédiaire Cr.Hrs.6

(L'ancien 008.210) Trois heures de cours et une heure de conversation par semaine. Révision de la grammaire, exercices, développement de l'expression orale et conversation. Introduction à la poésie et à la prose allemandes. On ne peut se faire créditer le GRMN 2101 (008.210) et le GRMN 2100 (008.210). Préalable: [allemand de Secondaire 4] ou [une note minimale de C dans le GRMN 1120 (008.112) ou GRMN 1121 (008.112)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**GRMN 3201** Deutsche sprachpraxis I Cr.Hrs.6

(L'ancien 008.320) Approfondissement, au moyen d'exercices pratiques, de la conversation et de la traduction (français - allemand), de l'allemand parlé et écrit à l'aide de textes variés. L'accent sera mis sur l'étude du vocabulaire et des particularités de structure et de style. On ne peut se faire créditer le GRMN 3201 (008.320) et le GRMN 3200 (008.320). Préalable: une note minimale de C dans le GRMN 2100 (008.210) ou GRMN 2101 (008.210). Donné au l'Université de Saint-Boniface.

**GRMN 3211** Allemand commercial Cr.Hrs.6

(L'ancien 008.321) Initiation, au moyen d'exercices oraux et écrits, au vocabulaire commercial et aux techniques d'écriture dans le domaine des affaires. Révision de la grammaire allemande avec l'accent sur la composition et la conversation appliquées au domaine commercial. On ne



peut se faire créditer le GRMN 3211 (008.321) et le GRMN 3210 (008.321). Préalable: [une note minimale de C dans GRMN 2100 (008.210) ou GRMN 2101 (008.210) ou le GRMN 2110 (008.211)] ou l'autorisation écrite du professeur ou de la professeure. Donné au l'Université de Saint-Boniface.

**GRMN 3601** Sujets particuliers Cr.Hrs.3  
(L'ancien 008.360) Le contenu de ce cours peut changer en fonction des besoins et des intérêts des étudiants et des professeurs. Préalable: [une note minimale de C dans GRMN 2101 (008.210) ou GRMN 2100 (008.210)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

## Faculté des arts-History

**HIST 1201** Initiation à la civilisation occidentale (G) Cr.Hrs.6  
(L'ancien 011.120) Aperçu de l'histoire culturelle du monde occidental de l'antiquité grecque à nos jours. L'étudiant(e) qui détient les crédits du HIST 1201 (011.120) ne peut se faire créditer aucun des cours HIST 1200 (011.120) ou HIST 1350 (011.135) ou HIST 1360 (011.136). Donné au l'Université de Saint-Boniface.

**HIST 1441** Histoire du Canada (C) Cr.Hrs.6  
(L'ancien 011.144) Étude de l'évolution générale du Canada, des "origines" à nos jours. À travers un survol des principales périodes, régions, groupes, personnages et institutions qui ont contribué à la formation et à la transformation de la société canadienne, il s'agira d'illustrer la richesse et la complexité des rapports humains dans le temps et l'espace. L'étudiant(e) qui détient les crédits du HIST 1441 (011.144) ne peut se faire créditer aucun des cours HIST 1440 (011.144) ou HIST 1390 (011.139) ou HIST 1400 (011.140). Donné au l'Université de Saint-Boniface.

**HIST 2041** Histoire des États-Unis jusqu'en 1877 (A) Cr.Hrs.3  
(L'ancien 011.204) Une vue générale du développement du peuple américain et de l'établissement jusqu'à la période de Reconstruction. L'étudiant(e) ne peut se faire créditer à la fois le HIST 2041 (011.204) et le HIST 2230 (011.223). Donné au l'Université de Saint-Boniface.

**HIST 2191** Histoire économique et sociale canadienne du XIXe siècle (C) Cr.Hrs.6  
(L'ancien 011.219) Ce cours aborde l'émergence de l'industrialisation au Canada et ses effets sur la société canadienne. La mise en place d'une bourgeoisie industrielle et d'un prolétariat sera examinée attentivement de même que ses implications sur la société canadienne. Donné au l'Université de Saint-Boniface.

**HIST 2381** Le monde du 20e siècle (G,M) Cr.Hrs.6  
(L'ancien 011.238) Les crises du monde moderne, y compris l'impact, sur une échelle universelle, de la civilisation occidentale, le choc des idéologies, la guerre et la paix, et la modernisation. L'étudiant(e) ne peut se faire créditer à la fois le HIST 2381 (011.238) et le HIST 2380 (011.238). Donné au l'Université de Saint-Boniface.

**HIST 2481** Histoire de la France depuis 1500 (E) Cr.Hrs.6  
(L'ancien 011.248) Aperçu de la Renaissance des XVIIe, XVIIIe et XIXe siècles et de l'époque contemporaine. Donné

au l'Université de Saint-Boniface.

**HIST 2661** Histoire de l'Union soviétique (E) Cr.Hrs.3  
Une attention particulière sera donnée à la Révolution russe de 1917, à la nature et au fonctionnement du système politique soviétique, aux expériences sociales et économiques du régime soviétique ainsi qu'au rôle des Soviétiques dans la politique internationale. L'étudiant(e) qui détient les crédits du HIST 2661 ne peut se faire créditer aucun des cours HIST 2660 (011.266) HIST 2490 (011.249) ou l'ancien HIST 3471 (011.347). Donné au l'Université de Saint-Boniface.

**HIST 2671** Histoire du capitalisme (M) Cr.Hrs.3  
Étude de l'émergence et de l'évolution de capitalisme ainsi que de ses conséquences sociales du 15e siècle jusqu'à nos jours. L'étudiant(e) ne peut se faire créditer à la fois le HIST 2671 et le HIST 2670 (011.267). Donné au l'Université de Saint-Boniface.

**HIST 2761** Histoire des États-Unis depuis 1877 (A) Cr.Hrs.3  
(L'ancien 011.276) Une revue générale du développement du peuple américain à partir de la Reconstruction jusqu'au présent. L'étudiant(e) qui détient les crédits du HIST 2761 (011.276) ne peut se faire créditer aucun des cours HIST 2760 (011.276) ou HIST 2230 (011.223). Donné au l'Université de Saint-Boniface.

**HIST 2971** Le Canada moderne : de 1921 à nos jours (C) Cr.Hrs.6  
(L'ancien 011.297) Étude approfondie de la transformation du Canada en un Etat moderne, entité nationale, politique, économique, sociale et culturelle. L'étudiant(e) ne peut se faire créditer à la fois le HIST 2971 (011.297) et le HIST 2970 (011.297). Donné au l'Université de Saint-Boniface.

**HIST 2991** Histoire de l'Église catholique depuis 1540 (G) Cr.Hrs.3  
Histoire de l'Église catholique depuis 1540 jusqu'à nos jours. On portera attention particulièrement à la réponse que l'Église a donnée à la modernisation du monde ainsi qu'à l'évolution théologique et aux réformes institutionnelles. L'étudiant(e) ne peut se faire créditer à la fois le HIST 2991 et le HIST 2990 (011.299). Donné au l'Université de Saint-Boniface.

**HIST 3011** La Guerre au 20e siècle (G) Cr.Hrs.3  
Ce cours aborde le phénomène de la guerre au 20e siècle dans tous ses aspects: militaires, économiques, sociaux, culturels, humains. Il sera question des deux guerres mondiales et de la Guerre froide mais aussi des guerres régionales ou locales. Nous traiterons aussi des différentes formes que la guerre a prises au siècle dernier: décolonisation, guérilla, terrorisme. Préalable: [avoir obtenu une note minimale de C dans six crédits en histoire] ou l'autorisation écrite de la professeure ou du professeur. Donné au l'Université de Saint-Boniface.

**HIST 3101** Histoire de l'Éducation en Occident depuis 1500, une introduction (M) Cr.Hrs.3  
Introduction à l'histoire de l'éducation en Occident. Présentation des grands jalons au cours des cinq cents dernières années. Parmi les thèmes abordés, il y aura la création et de l'évolution des différents niveaux d'écoles, la programmation, le financement, la place de l'Église et celle de l'État dans l'éducation, les méthodes d'enseignement, les différences entre les sexes, la progression de



l'alphabétisation et de la scolarisation. Préalable: [avoir obtenu une note minimale de C dans six crédits en histoire] ou l'autorisation écrite de la professeure ou du professeur. Donné au l'Université de Saint-Boniface.

**HIST 3111** Sujets spéciaux 1 (G) Cr.Hrs.3

Occasion d'étudier un thème choisi en histoire. Le contenu varie mais doit comprendre un travail en histoire sociale ou culturelle ou sur un sujet spécifique. Consulter le département d'histoire et le Guide d'inscription. Préalable: [avoir obtenu une note minimale de C dans six crédits en histoire] ou l'autorisation écrite de la professeure ou du professeur. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donné à l'Université de Saint-Boniface.

**HIST 3121** Sujets spéciaux 2 (G) Cr.Hrs.3

L'occasion d'étudier un thème choisi en histoire. Le contenu varie mais doit comprendre un travail en histoire sociale ou culturelle ou sur un sujet spécifique. Consulter le département d'histoire et le Guide d'inscription. Préalable: [avoir obtenu une note minimale de C dans six crédits en histoire] ou l'autorisation écrite de la professeure ou du professeur. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donné au l'Université de Saint-Boniface.

**HIST 3141** Histoire de la démocratie (G) Cr.Hrs.3

Ce cours aborde un sujet au coeur de l'actualité: la démocratie et, plus spécialement la démocratisation des États dans le monde depuis le 19e siècle. Nous abordons les aspects théoriques de la démocratie et l'évolution de la mise en pratique de la théorie démocratique. Préalable: [avoir obtenu une note minimale de C dans six crédits en histoire] ou l'autorisation écrite de la professeure ou du professeur. Donné au l'Université de Saint-Boniface.

**HIST 3721** Histoire du Manitoba (C) Cr.Hrs.6

(L'ancien 011.372) L'évolution politique, économique et sociale de la province depuis sa création à nos jours. Le cours sera précédé d'un bref aperçu de l'ère missionnaire dans l'Ouest canadien. Préalable: [une note minimale de C dans HIST 1440 (011.144) ou HIST 1441 (011.144)] ou l'assentiment du département. Donné au l'Université de Saint-Boniface.

**HIST 3761** Sujets particuliers en histoire des États-Unis I (A) Cr.Hrs.3

(L'ancien 011.376) La matière de ce cours sera annoncé chaque année. Veuillez consulter le département d'histoire. L'étudiant(e) ne peut se faire créditer à la fois le HIST 3761 (011.376) et le HIST 3760 (011.376). Préalable: [une note minimale de C dans six crédits en histoire] ou l'assentiment du département. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donné au l'Université de Saint-Boniface.

**HIST 3771** Sujets particuliers en histoire des États-Unis II (A) Cr.Hrs.3

(L'ancien 011.377) La matière de ce cours sera annoncée chaque année. Veuillez consulter le département d'histoire. L'étudiant(e) ne peut se faire créditer à la fois le HIST 3771 (011.377) et le HIST 3770 (011.377). Préalable: [une note minimale de C dans six crédits en histoire] ou l'assentiment du département. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois.

Donné au l'Université de Saint-Boniface.

**HIST 3781** Études choisies en histoire du Canada I (C) Cr.Hrs.3

(L'ancien 011.378) Le contenu de ce cours variera d'année en année. Il est construit en vue de donner une connaissance approfondie de certains sujets et thèmes particuliers de l'histoire du Canada. La description détaillée de ce cours sera disponible à l'avance au bureau du professeur. L'étudiant(e) ne peut se faire créditer à la fois le HIST 3781 (011.378) et le HIST 3780 (011.378). Préalable: [une note minimale de C dans six crédits en histoire] ou l'assentiment du département. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donné au l'Université de Saint-Boniface.

**HIST 3791** Études choisies en histoire du Canada II (C) Cr.Hrs.3

(L'ancien 011.379) Le contenu de ce cours variera d'année en année. Il est construit en vue de donner une connaissance approfondie de certains sujets et thèmes particuliers de l'histoire du Canada. La description détaillée de ce cours sera disponible à l'avance au bureau du professeur. L'étudiant(e) ne peut se faire créditer à la fois le HIST 3791 (011.379) et le HIST 3790 (011.379). Préalable: [une note minimale de C dans six crédits en histoire] ou l'assentiment du département. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donné au l'Université de Saint-Boniface.

**HIST 3811** Famille, amour et mariage dans la société occidentale, 1500-1800 (E) Cr.Hrs.6

(L'ancien 011.381) Étude de la théorie et de la pratique du mariage dans l'Europe moderne particulièrement dans un rapport avec les aspects démographiques, économiques, religieux et juridiques de la relation maritale. L'étudiant(e) ne peut se faire créditer à la fois le HIST 3811 (011.381) et le HIST 3810 (011.381). Préalable: [une note minimale de C dans six crédits en histoire] ou l'assentiment du département. Donné au l'Université de Saint-Boniface.

## Faculté des arts-Philosophy

**PHIL 1291** Pensée critique Cr.Hrs.3

Ce cours aide les étudiants à penser clairement et de manière critique, à présenter, à défendre et à évaluer des arguments. On discutera des bons et des mauvais raisonnements, des sophismes quotidiennes et de certaines formes de raisonnement telles que le syllogisme catégorique et des moyens et des manières de définir les mots. Les étudiants ne peuvent se faire créditer à la fois les cours PHIL 1291 (015.129) et un quelconque des cours suivants: PHIL 1290 ou PHIL 1320 (015.132) ou PHIL 1321 (015.132).

**PHIL 1321** Introduction à la logique Cr.Hrs.6

(L'ancien 015.132) Ce cours a pour but d'aider les étudiants à penser clairement et de manière critique, à présenter, à défendre et à évaluer les arguments. Le cours traite de la logique catégorique, des sophismes non-formels, de la définition, de la logique symbolique moderne et de la méthode scientifique. L'étudiant(e) qui ont obtenu des crédits pour les cours PHIL 2430 (015.243) et PHIL 3750 (015.375) ne sont pas autorisés à suivre ce cours. L'étudiant(e) qui détient les crédits du PHIL 1321 (015.132) ne peut se faire créditer aucun des cours PHIL 1320 (015.132) ou PHIL 1290 (015.129) ou PHIL 1330 (015.133). Donné au l'université de



Saint-Boniface.

**PHIL 1511** Introduction historique à la philosophie Cr.Hrs.6 (L'ancien 015.151) Introduction aux grands penseurs de la civilisation occidentale des anciens grecs tels que Platon et Aristote jusqu'aux philosophes analytiques et (si possible) aux existentialistes contemporains. Introduction aux grandes questions telles que la nature de la réalité, l'existence de Dieu, la connaissance humaine et la moralité. La logique élémentaire sera aussi étudiée. L'étudiant(e) qui détient les crédits du PHIL 1511 (015.151) ne peut se faire créditer aucun des cours PHIL 1510 (015.151) ou PHIL 1200 (015.120) ou PHIL 1260 (015.126). Le cours PHIL 1510 (015.151) fait partie à la fois du groupe 1 et du groupe 2. Donné au l'Université de Saint-Boniface.

**PHIL 2301** Philosophie politique Cr.Hrs.6 (L'ancien 015.230) Analyse et évaluation des doctrines des grands penseurs politiques tels que Platon, Hobbes, Locke, Mill, Marx; leurs idéaux de justice, de liberté, de bonheur, d'égalité et d'épanouissement personnel, leurs théories sur la nature humaine et sur les fondements de la société. L'étudiant(e) ne peut se faire créditer à la fois le PHIL 2301 (015.230) et le PHIL 2300 (015.230). Préalable: après avoir complété et réussi 30 unités de cours universitaires. Donné au l'Université de Saint-Boniface.

**PHIL 2531** Morale Cr.Hrs.6 (L'ancien 015.253) Étude des problèmes moraux contemporains: la libération de la femme, la liberté de la personne, la pollution, la discrimination, l'avortement, les drogues, la violence - qui à la lumière de divers courants d'idées et de la tradition chrétienne. L'étudiant(e) détient les crédits du PHIL 2531 (015.253) ne peut se faire créditer aucun des cours PHIL 2290 (015.229) ou PHIL 2740 (015.274) ou PHIL 2750 (015.275). Donné au l'Université de Saint-Boniface.

**PHIL 2631** Le rationalisme continental Cr.Hrs.3 (L'ancien 015.263) Étude des philosophes du continent: Descartes, Spinoza, Leibniz, qui ont perçu la raison plutôt que l'expérience comme la clé de toute connaissance de l'Univers. L'étudiant(e) ne peut se faire créditer à la fois le PHIL 2631 (015.263) et le PHIL 2630 (015.263). Préalable: [une note minimale de C dans six heures-crédits au niveau 1000 en philosophie] ou autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PHIL 2641** L'empirisme britannique Cr.Hrs.3 (L'ancien 015.264) Revue et analyse des théories des grands empiristes britanniques: Locke, Berkeley et Hume, sur la nature et les fondements de la connaissance humaine et ses relations avec l'expérience. L'étudiant(e) ne peut se faire créditer à la fois le PHIL 2641 (015.264) et le PHIL 2640 (015.264). Préalable: [une note minimale de C dans six heures-crédits au niveau 1000 en philosophie] ou autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PHIL 2651** Platon Cr.Hrs.3 (L'ancien 015.265) Examen des vues de Platon sur la réalité, la politique et la morale à travers l'étude de ses dialogues les plus importants. Le cours débutera avec une discussion des principaux philosophes présocratiques. L'étudiant(e) ne peut se faire créditer à la fois le PHIL 2651 (015.265) et le PHIL 2650 (015.265). Préalable: [une note minimale de C dans six heures-crédits au niveau 1000 en philosophie] ou

autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PHIL 2661** Aristote Cr.Hrs.3 (L'ancien 015.266) Une étude des idées les plus importantes d'Aristote sur la réalité, la connaissance, la morale et la politique. Étude des philosophies postclassiques: l'épicurisme et le stoïcisme. L'étudiant(e) ne peut se faire créditer à la fois le PHIL 2661 (015.266) et le PHIL 2660 (015.266). Préalable: [une note minimale de C dans six heures-crédits au niveau 1000 en philosophie] ou autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PHIL 2701** Philosophie de la religion Cr.Hrs.6 (L'ancien 015.270) Examen critique des raisons pouvant justifier l'attitude religieuse. Le cours portera entre autres sur l'existence de Dieu et sa nature, le mal, la raison et la foi, la signification du discours religieux, la révélation, les miracles, le mysticisme. L'étudiant(e) qui détient le crédits du PHIL 2701 (015.270) ne peut se faire créditer aucun des cours PHIL 2700 (015.270) ou PHIL 2730 (015.273). Donné au l'Université de Saint-Boniface.

**PHIL 2741** Éthique et biomédecine Cr.Hrs.3 (Ancien 015.274) Le cours examine quelques-unes des plus importantes questions d'éthique soulevées par les récents développements en biologie et en médecine. Les sujets à couvrir incluent: l'attribution de rares ressources médicales limitées. la manipulation génétique; l'euthanasie vs la prolongation de la vie; l'avortement et l'infanticide ainsi que l'expérimentation sur des sujets humains. On ne peut se faire créditer à la fois le PHIL 2741 et aucun des cours suivants: PHIL 2290 (015.229) ou PHIL 2531 (015.253) ou PHIL 2740 (015.274). Préalable: avoir complété avec succès 30 heures de crédits universitaires.

**PHIL 2751** Éthique et environnement Cr.Hrs.3 (Ancien 015.275) Examen de certaines questions éthiques importantes en rapport avec la pollution de l'environnement et de l'épuisement des ressources. On étudiera (entre autres) : l'idéal des limites de la liberté et de l'environnement, la rareté et l'idéal de la justice, la croissance versus l'état de stabilité économique, les droits des animaux et l'éthique de la survie vs. l'éthique du bien être. On ne peut se faire créditer à la fois le PHIL 2751 et aucun des cours suivants: PHIL 2290 (015.229) ou PHIL 2531 (015.253) ou PHIL 2750 (015.275). Préalable: avoir complété avec succès 30 heures crédits universitaires.

**PHIL 2821** L'existentialisme Cr.Hrs.6 (L'ancien 015.282) Étude des thèmes existentialistes qui apparaissent à travers les œuvres d'écrivains et de philosophes tels que: Beckett, Camus, de Beauvoir, Hesse, Heidegger, Kafka, Jaspers, Kierkegaard, Marcel, Nietzsche, Sartre, Buber et Lange. L'étudiant(e) qui détient les crédits du PHIL 2821 (015.282) ne peut se faire créditer aucun des cours PHIL 2820 (015.282) ou PHIL 2710 (015.271) ou PHIL 2720 (015.272).. Donné au l'Université de Saint-Boniface.

**PHIL 2831** Éthique des affaires Cr.Hrs.3 (Ancien 015.283) Le cours explore l'application de la théorie éthique dans les affaires. Les sujets discutés incluent normalement: les théories sur la justice, la responsabilité des corporations, l'éthique dans la publicité, la protection du consommateur et de l'environnement, les préférences à l'embauche. On ne peut se faire créditer à la fois PHIL 2831



et PHIL 2830 (015.283). Préalable: avoir complété avec succès 30 crédits universitaires.

**PHIL 2841** Éthique de la guerre et de la paix Cr.Hrs.3 (Ancien 015.284) Une étude des questions éthiques relatives à la guerre et à la recherche de la paix qu'on trouve traitées dans les oeuvres des plus grands philosophes et des penseurs politiques et militaires choisis. Les théories morales pertinentes telles que la non-violence, la guerre sainte, la guerre juste, les raisonnements éthiques qui sous-tendent les politiques de dissuasion seront examinées de manière critique dans le contexte historique et contemporain. On ne peut se faire créditer à la fois PHIL 2841 et PHIL 2840 (015.284).

**PHIL 2861** PHILOSOPHIE DU DROIT Cr.Hrs.3 (Ancien 015.286) Une introduction à la philosophie du droit et au système réglementaire en général. Les sujets abordés incluent: le concept de loi (la loi et la religion, la loi naturelle, et les lois des livres), la relation, s'il y a lieu, entre la loi et la moralité et les politiques du droit au Canada et ailleurs. On ne peut se faire créditer à la fois PHIL 2861 et PHIL 2860 (015.286).

**PHIL 2871** La philosophie et le droit Cr.Hrs.3 (Ancien 015.207) Examen de la philosophie du droit à partir des questions non traitées du cours PHIL 2861 (015.286). L'étudiant examinera des thèmes tels que: la culpabilité et la responsabilité; les théories du châtement; le droit à la dissidence; le raisonnement légal et l'éthique professionnelle. On ne peut pas se faire créditer à la fois PHIL 2871 et PHIL 2870 (015.287).

**PHIL 3551** Philosophie de l'éducation Cr.Hrs.6 (L'ancien 015.355) Exposés, examen et évaluation des diverses théories sur ce qui constitue l'éducation idéale. Des institutions et des pratiques les plus aptes à réaliser cet idéal et des compromis à faire selon la nature humaine. L'étudiant(e) qui détient les crédits du PHIL 3551 (015.355) ne peut se faire créditer aucun des cours PHIL 3550 (015.355) ou PHIL 2810 (015.281). Préalable: après avoir complété et réussi 30 unités de cours universitaires. Donnée au l'Université de Saint-Boniface.

**PHIL 3571** Philosophie de l'homme Cr.Hrs.6 (L'ancien 015.357) Dans le monde, l'Homme est déterminé. Par la raison, il en émerge et cherche le sens de son existence. Est-ce là toute son originalité? Liberté et valeurs. Préalable: [une note minimale de C dans six heures-crédits en philosophie] ou autorisation écrite du professeur. Donnée au l'Université de Saint-Boniface.

## Faculté des arts-Political Studies

**POLS 1501** Introduction à la politique Cr.Hrs.6 (L'ancien 019.150) Un aperçu et une évaluation de l'idéologie contemporaine, du gouvernement et des problèmes internationaux. L'étudiant(e) ne peut se faire créditer à la fois le POLS 1501 (019.150) et le POLS 1500 (019.150). Donnée au l'Université de Saint-Boniface.

**POLS 2041** Introduction aux relations internationales Cr.Hrs.6 (L'ancien 019.204) Introduction à l'analyse des actions et des interactions politiques internationales. Le cours examine la manière dont les politiques étrangères des États sont

formulées; les conflits, les compétitions et les coopérations produites par les interactions étatiques. L'étudiant(e) qui détient les crédits du POLS 2041 (019.204) ne peut se faire créditer aucun des cours POLS 2040 (019.204) ou l'ancien 019.153. Donnée au l'Université de Saint-Boniface.

**POLS 2071** Introduction au système gouvernemental canadien Cr.Hrs.6 (L'ancien 019.207) Une revue à la fois des institutions et des processus politiques canadiens, y compris les systèmes parlementaires et fédéral, les partis politiques et les groupes d'intérêt. L'étudiant(e) qui détient les crédits du POLS 2071 (019.207) ne peut se faire créditer aucun des cours POLS 2070 (019.207) ou l'ancien 019.156. Donnée au l'Université de Saint-Boniface.

**POLS 2511** Les grands penseurs politiques Cr.Hrs.6 (L'ancien 019.251) Aperçu et jugement sur la pensée des grands philosophes politiques, de l'Antiquité aux temps modernes. L'étudiant(e) ne peut se faire créditer à la fois le POLS 2511 (019.251) et le POLS 2510 (019.251). Donnée au l'Université de Saint-Boniface.

**POLS 2561** Questions d'actualité en politique canadienne Cr.Hrs.6 (L'ancien 019.256) Une analyse des activités du gouvernement canadien dans certains domaines problématiques ainsi qu'une revue des différentes approches à ces problèmes. Donnée au l'Université de Saint-Boniface.

**POLS 2571** Initiation à l'administration publique Cr.Hrs.6 (L'ancien 019.257) Une revue des principes fondamentaux, du recrutement du personnel et de l'organisation ainsi que de la gestion fiscale au sein du gouvernement. L'étudiant ne peut se faire créditer à la fois le POLS 2571 (019.257) et le POLS 2570 (019.257). Donnée au l'Université de Saint-Boniface.

**POLS 3141** Sujets particuliers en politique 1 Cr.Hrs.3 (L'ancien 019.314) Le contenu du cours variera. Contacter le secteur pour une description de cours. Préalable: consentement écrit du professeur ou chef de département. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donnée au l'Université de Saint-Boniface.

**POLS 3151** Sujets particuliers en politique 2 Cr.Hrs.3 (L'ancien 019.315) Le contenu du cours variera. Contacter le secteur pour une description de cours. Préalable: consentement écrit du professeur ou chef de département. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donnée au l'Université de Saint-Boniface.

**POLS 3251** Économie politique international Cr.Hrs.3 Le cours examine les interrelations entre processus politiques, production et distribution de la richesse dans l'environnement international. L'accent est mis autant sur le développement historique, les perspectives théoriques majeures que sur les enjeux fondamentaux en économie politique internationale. L'étudiant(e) qui détient les crédits du POLS 3251 ne peut se faire créditer aucun des cours POLS 3250 (019.325) ou l'ancien 019.383. Préalable: [une note minimale de C dans un des cours suivants: POLS 2040 (019.204) ou POLS 2041 (019.204) ou l'ancien 019.153] ou le consentement écrit de l'enseignant ou du chef de



département. Donné au l'Université de Saint-Boniface.

**POLS 3561** Politique étrangère canadienne Cr.Hrs.6  
(L'ancien 019.356) Une analyse de la tradition canadienne en politique étrangère, le développement de la politique étrangère pendant la Guerre Froide et les perspectives pour l'avenir en ce qui a trait à l'Alliance Atlantique, les États-Unis et le Tiers-Monde. L'étudiant(e) qui détient les crédits du POLS 3561 (019.356) ne peut se faire créditer aucun des cours POLS 3520 (019.352) ou l'ancien 019.368. Préalable: [une note minimale de C dans un des cours suivants: POLS 2040 (019.204) ou POLS 2041 (019.204) ou l'ancien 019.153] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**POLS 3841** Les approches théoriques en relations internationales Cr.Hrs.3  
Études des différentes approches théoriques utilisées dans l'analyse des relations internationales, ainsi que les méthodologies utilisées par les analystes de la politique internationale. L'étudiant(e) ne peut se faire créditer à la fois le POLS 3841 et le POLS 3840 (019.384). Préalable: [une note minimale de C dans un des cours suivants: POLS 2040 (019.204) ou POLS 2041 (019.204) ou l'ancien 019.153] ou le consentement écrit de l'enseignant ou du chef de département. Donné au l'Université de Saint-Boniface.

## Faculté des arts-Psychology

**PSYC 1211** Introduction à la psychologie I Cr.Hrs.3  
(L'ancien 017.121) Ce cours traite des processus fondamentaux sous-jacents à la psychologie. On y parle des bases biologiques des comportements, des processus sensoriels, de la perception, des états de conscience, de l'apprentissage et de la mémoire. On décrit également les méthodes de recherche propres à la psychologie scientifique. L'étudiant(e) qui détient les crédits du PSYC 1211 (017.121) ne peut se faire créditer aucun des cours PSYC 1200 (017.120) ou PSYC 1201 (017.120). Donné au l'Université de Saint-Boniface.

**PSYC 1221** Introduction à la psychologie II Cr.Hrs.3  
(L'ancien 017.122) Ce cours traite des connaissances utilisées par les psychologues pour aider l'être humain dans sa compréhension personnelle et ses interactions sociales. On y parle de motivations, d'intelligence, de personnalité et de psychopathologie. On décrit également les outils et les méthodes de travail propres à la psychologie appliquée. L'étudiant(e) qui détient les crédits du PSYC 1221 (017.122) ne peut se faire créditer aucun des cours PSYC 1200 (017.120) ou PSYC 1201 (017.120). Donné au l'Université de Saint-Boniface.

**PSYC 2251** Introduction à la recherche en psychologie Cr.Hrs.3  
(L'ancien 017.225) Une étude de la psychologie comme discipline scientifique et la description des méthodes de collecte et d'interprétation des données en psychologie. Ce cours est obligatoire pour la majeure et devrait être suivi en deuxième année. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 2251 (017.225) et le PSYC 2250 (017.225). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur.

Donné au l'Université de Saint-Boniface.

**PSYC 2261** Introduction aux méthodes de recherche en psychologie Cr.Hrs.3  
(L'ancien 017.226) Étude des concepts inductifs d'inférence et d'explication. Ce cours mettra l'accent sur les schèmes de recherche en psychologie. Ce cours est obligatoire pour la majeure, et devrait être suivi en deuxième année. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 2261 (017.226) et le PSYC 2260 (017.226). Préalable: une note minimale de C dans le PSYC 2250 (017.225) ou le PSYC 2251 (017.225). Donné au l'Université de Saint-Boniface.

**PSYC 2291** Le développement de l'enfant Cr.Hrs.3  
(L'ancien 017.229) Étude du développement psychologique normal de la période prénatale à la puberté. Les méthodes de recherche utilisées dans l'étude de l'enfant sont présentées. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 2291 (017.229) et le PSYC 2290 (017.229). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PSYC 2311** Le développement de l'adolescent Cr.Hrs.3  
(L'ancien 017.231) Étude du développement psychologique normal de la puberté au stade adulte, à l'aide des résultats de recherches scientifiques. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 2311 (017.231) et le PSYC 2310 (017.231). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PSYC 2411** Psychologie sociale 1 Cr.Hrs.3  
(L'ancien 017.241) Ce cours présente une introduction de base aux façons par lesquelles nous affectons et sommes affectés par les comportements des autres. Les thèmes abordés incluent: les méthodes utilisées par les psychologues sociaux, les attitudes et le changement d'attitude, les croyances sociales et le jugement, la conformité et la persuasion. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 2411 (017.241) et le PSYC 2410 (017.241). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PSYC 2441** Principes de modification du comportement Cr.Hrs.3  
(L'ancien 017.244) On discutera les hypothèses fondamentales, les principes et les méthodes de modification du comportement à partir d'exemples tirés du comportement humain, normal et anormal. Les étudiants pourraient effectuer des projets de recherche supervisés dans des secteurs d'application spécifique ou de la recherche fondamentale sur le comportement. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 2441 (017.244) et le PSYC 2440 (017.244). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Donné au l'Université de



Saint-Boniface.

**PSYC 2451** Domaines d'application de la modification du comportement Cr.Hrs.3  
(L'ancien 017.245) L'étude d'un certain nombre de domaine d'application de la modification du comportement basée sur les principes et les procédés décrits dans le cours PSYC 2440 (017.244) ou PSYC 2441 (017.244). Les étudiants pourraient effectuer des projets de recherche supervisés dans des secteurs d'application spécifique; ou de la recherche fondamentale sur le comportement. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 2451 (017.245) et le PSYC 2450 (017.245). Préalable: une note minimale de C dans le PSYC 2440 (017.244) ou PSYC 2441 (017.244). Donné au l'Université de Saint-Boniface.

**PSYC 2481** Processus cognitifs Cr.Hrs.3  
(L'ancien 017.248) Une introduction aux processus langage, supérieurs dans une perspective de traitement de l'information. Les sujets abordés incluent l'attention, le développement cognitif, l'imagerie, le langage, la mémoire et la résolution de problèmes. Le cours sera basé sur de nombreuses références aux résultats expérimentaux récents. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 2481 (017.248) et le PSYC 2480 (017.248). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PSYC 3131** Psychologie de la santé Cr.Hrs.3  
Introduction au domaine de la psychologie de la santé. On y étudie comment les interactions complexes entre des facteurs environnementaux, psychologiques, neurologiques et immunitaires contribuent au maintien de la santé et, par conséquent, au développement des maladies. Préalables: une note minimale de C dans le PSYC 1200 (ancien 017.120) ou une note minimale de C dans tous les deux PSYC 1211 (ancien 017.121) et PSYC 1221 (ancien 017.122). L'étudiant(e) ne peut se faire créditer à la fois le PSYC 3131 et le PSYC 3130

**PSYC 3351** Neurosciences du comportement Cr.Hrs.3  
Ce cours présente les fondements de la neurobiologie du comportement. Une importance particulière est placée dans les propriétés du traitement de l'information du système nerveux de façon à offrir un cadre de référence à la compréhension de thèmes tels la perception, l'attention, le sommeil et la vigilance, la motivation et l'apprentissage. L'étudiant(e) qui détient les crédits du PSYC 3351 ne peut se faire créditer aucun des cours PSYC 3350 ou l'ancien PSYC 3331 (017.333) ou l'ancien PSYC 3330 (017.333). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PSYC 3441** Perception Cr.Hrs.3  
(L'ancien 017.344) Un survol des méthodes et des techniques qui traitent de l'interaction entre les informations sensorielles et les informations existantes au sein de l'organisme. Les sujets traités incluent la psychophysique, les constances perceptives, l'apprentissage perceptuel, l'adaptation et les disorsions. L'étudiant ne peut pas se faire créditer à la fois le PSYC 3441 (017.344) et le PSYC 3160. Préalable: [une note

minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PSYC 3451** Psychologie de la personnalité Cr.Hrs.3  
(L'ancien 017.345) Étude de la théorie et de la recherche dans les principes qui gouvernent le développement de la personnalité. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 3451 (017.345) et le PSYC 3450 (017.345). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PSYC 3461** Psychologie de l'anormal Cr.Hrs.3  
(L'ancien 017.346) Étude de la théorie et de la recherche dans le domaine du comportement anormal de l'homme. On discute les formes principales des troubles psychologiques, leur prévention et leur traitement. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 3461 (017.346) et le PSYC 3460 (017.346). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PSYC 3511** Psychologie industrielle et organisationnelle Cr.Hrs.3  
Examen des modèles théoriques contemporains et de la recherche portant sur les aspects psychologiques impliqués dans le comportement en milieu de travail. Les thèmes abordés incluent la sélection du personnel, les processus de groupes, la satisfaction, la productivité et la culture organisationnelle. On ne peut se faire créditer PSYC 3511 et PSYC 3510 (017.351). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur.

**PSYC 3531** Problèmes contemporains 1 Cr.Hrs.3  
(L'ancien 017.353) Le contenu de ce cours variera d'année en année, mais traitera généralement d'un sujet spécifique d'actualité concernant la psychologie, ou de l'analyse psychologique d'un problème d'intérêt public. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 3531 (017.353) et le PSYC 3530 (017.353). Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donné au l'Université de Saint-Boniface.

**PSYC 3631** Mesure et évaluation en psychologie Cr.Hrs.3  
(L'ancien 017.363) Étude et application des principes de la mesure dans divers domaines psychologiques. On étudiera les concepts de validité, de constance, d'échelonnement, de variance, et on offrira une introduction à la construction et l'utilisation de différents tests psychologiques. L'étudiant(e) ne peut se faire créditer à la fois le PSYC 3631 (017.363) et le PSYC 3630 (017.363). Préalable: [une note minimale de C dans le PSYC 2300 (017.230)] ou [une note minimale de



C dans tous les deux PSYC 2250 (017.225) et PSYC 2260 (017.226)] ou [une note minimale de C dans tous les deux PSYC 2251 (017.225) et PSYC 2261 (017.226)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

**PSYC 3641** Introduction à la neuropsychologie Cr.Hrs.3 (L'ancien 017.364) Un survol des connaissances actuelles touchant les relations entre le cerveau et les comportements humains. Les sujets suivants sont traités: organisation du système nerveux, les désordres neurologiques, effets des lésions cérébrales sur les comportements (agnosie, aphasie, apraxie, négligence, etc.) asymétrie cérébrale, applications cliniques. Préalable: [une note minimale de C dans le PSYC 1200 (017.120) ou le PSYC 1201 (017.120)] ou [une note minimale de C dans tous les deux PSYC 1211 (017.121) et PSYC 1221 (017.122)] ou l'autorisation écrite du professeur. Donné au l'Université de Saint-Boniface.

### Faculté des arts-Religion

**RLGN 1283** Le christianisme ancien et médiéval I (A) Cr.Hrs.3

Une étude des affirmations et des pratiques chrétiennes à partir de l'histoire du christianisme dès son début jusqu'à la fin du moyen âge. On ne peut se faire créditer RLGN 1283 et RLGN 1281 (020.128).

**RLGN 1285** Le christianisme depuis la renaissance II (A) Cr.Hrs.3

Une étude des affirmations et des pratiques chrétiennes à partir de l'histoire du christianisme de la Réforme protestante jusqu'au présent. On ne peut se faire créditer RLGN 1285 et RLGN 1281 (020.128).

**RLGN 1323** Introduction aux Religions du monde I (B) Cr.Hrs.3

Un aperçu de l'histoire, les grandes idées et pratiques des grandes religions du monde à partir de leur littérature et les traditions : l'Hindouïsme, le Bouddhisme, le Sikhisme, le Confucianisme et le Taoïsme. On ne peut se faire créditer RLGN 1323 et RLGN 1320 ou RLGN 1321 (020.132).

**RLGN 1325** Introduction aux religions du monde II (B) Cr.Hrs.3

Un aperçu de l'histoire, les grandes idées et pratiques des grandes religions du monde à partir de leur littérature et les traditions : le judaïsme, le Christianisme, l'Islam et les traditions des Amériques et de l'Afrique. On ne peut se faire créditer RLGN 1325 et RLGN 1320 ou RLGN 1321 (020.132).

**RLGN 1421** Éthique religieuse (C) Cr.Hrs.3

(L'ancien 020.142) Un examen de la pensée éthique de représentants d'une ou de plusieurs traditions religieuses. Une attention spéciale est portée sur des sujets comme la nature du bien et de la vertu, la place des lois ou commandements, et en relation entre la religion et la moralité. L'étudiant(e) qui détient le crédits du RLGN 1421 (020.142) ne peut se faire créditer aucun des cours RLGN 1420 (020.142) ou l'ancien 020.245. Donné au l'Université de Saint-Boniface.

**RLGN 2161** Introduction à l'Ancien Testament (A) Cr.Hrs.3 Un aperçu de l'histoire, de la littérature et des idées religieuses de l'Ancien Testament. On ne peut se faire

crediter RLGN 2161 et RLGN 2231 (020.223) ou RLGN 2160 (020.216).

**RLGN 2171** Introduction au Nouveau Testament

(A) Cr.Hrs.3

Un aperçu de l'histoire, de la littérature et des idées religieuses du Nouveau Testament. On ne peut se faire créditer RLGN 2171, RLGN 2170 ou RLGN 2711 (020.271).

**RLGN 2413** Les religions établies au Canada (C) Cr.Hrs.3

Un aperçu historique des institutions et groupes religieux établis avant le 19e siècle, au Canada, notant comment ceux-ci répondent aux caractéristiques spéciales de la vie canadienne. On ne peut se faire créditer RLGN 2413 et RLGN 2410 ou RLGN 2411 (020.241).

**RLGN 2415** Les nouvelles religions au Canada

(C) Cr.Hrs.3

Un aperçu historique et phénoménologique des nouvelles institutions et groupes religieux au Canada, visant comment ceux-ci répondent aux caractéristiques spéciales de la vie canadienne. On ne peut se faire créditer RLGN 2415 et RLGN 2410 ou RLGN 2411 (020.241).

**RLGN 2591** La religion et les problèmes sociaux

(C) Cr.Hrs.3

(L'ancien 020.259) Les problèmes tels que l'ordre, la justice, la guerre, le changement social, la désobéissance civile, l'avortement et l'euthanasie seront considérés à la lumière des ressources d'une ou de plusieurs traditions religieuses. L'étudiant(e) ne peut se faire créditer à la fois le RLGN 2591 (020.259) et le RLGN 2590 (020.259). Donné au l'Université de Saint-Boniface.

**RLGN 3131** La religion et la pensée moderne (C) Cr.Hrs.3

Étude des idées contenues dans certaines idéologies modernes telles que le marxisme, la théorie de l'évolution, les méthodes d'interprétation biblique, la psychologie moderne, l'athéisme et l'humanisme face à la religion. On ne peut se faire créditer à la fois le RLGN 3131 et RLGN 3251 (020.325) ou RLGN 3130 (020.313).

**RLGN 3261** Les religions et les femmes (C) Cr.Hrs.3

Le contenu de ce cours variera d'année en année. Toutefois, il traitera de sujets particuliers d'intérêt courant en la religion et la femme, de certains aspects de méthodologie et d'interprétation, en tout ce qui concerne les rôles et les pensées des femmes dans les religions.

**RLGN 3531** Problèmes contemporains 1 (C) Cr.Hrs.3

(L'ancien 020.353) Le contenu de ce cours variera d'année en année. Toutefois, il traitera de sujets particuliers d'intérêt courant en religion, de certains aspects de méthodologie de l'étude de la religion, ou d'une analyse de certains problèmes courants d'intérêt général du point de vue religieux. L'étudiant(e) ne peut se faire créditer à la fois le RLGN 3531 (020.353) et le RLGN 3530 (020.353).

Préalable: l'autorisation écrite du professeur. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donné au l'Université de Saint-Boniface.

**RLGN 3541** Problèmes contemporains 2 (C) Cr.Hrs.3

(L'ancien 020.354) Le contenu de ce cours variera d'année en année. Toutefois, il traitera de sujets particuliers d'intérêt courant en religion, de certains aspects de méthodologie de l'étude de la religion, ou d'une analyse de certains



problèmes courants d'intérêt général du point de vue religieux. L'étudiant(e) ne peut se faire créditer à la fois le RLGN 3541 (020.354) et le RLGN 3540 (020.354). Préalable: l'autorisation écrite du professeur. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donné au l'Université de Saint-Boniface.

## Faculté des arts-Sociology

**SOC 1211** Introduction à la microsociologie Cr.Hrs.3 (L'ancien 077.121) Introduction systématique à la perspective sociologique: points de vue théorique, méthodes et domaines de recherche. On initiera l'étudiant(e) à l'étude de la socialisation, des groupes, de la famille, de l'école, des minorités, des rôles sexuels. L'étudiant(e) qui détient les crédits du SOC 1211 (077.121) ne peut se faire créditer aucun des cours SOC 1200 (077.120) ou SOC 1201 (077.120). Donné au l'Université de Saint-Boniface.

**SOC 1221** Introduction à la macrosociologie Cr.Hrs.3 (L'ancien 077.122) Introduction systématique à la perspective sociologique: points de vue théorique, méthodes et domaines de recherche. On initiera l'étudiant(e) à la culture, la stratification sociale, les mouvements sociaux, la population, les institutions politiques, les différents systèmes de la société. L'étudiant(e) qui détient les crédits du SOC 1221 (077.122) ne peut se faire créditer aucun des cours SOC 1200 (077.120) ou SOC 1201 (077.120). Préalable: une note minimale de C dans le SOC 1211 (077.121). Donné au l'Université de Saint-Boniface.

**SOC 2221** Théories sociologiques classiques Cr.Hrs.3 (L'ancien 077.222) Un aperçu de la théorie sociologique classique. Ce cours mettra l'accent sur les principaux penseurs et les principales écoles de pensée en sociologie. L'étudiant(e) ne peut se faire créditer à la fois le SOC 2221 (077.222) et le SOC 2220 (077.222). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 2261** Sociologie de la ville et du milieu urbain Cr.Hrs.3 Étude des dimensions sociale et culturelle du phénomène urbain. Analyse de l'expérience urbaine, des formes de socialité et des inégalités sociales. On ne peut se faire créditer en même temps que SOC 2271. Préalables: une note minimale de C dans un des SOC 1201 ou SOC 1200 (ancien 077.120), ou les SOC 1211 (ancien 077.121) et SOC 1221 (ancien 077.122).

**SOC 2291** Introduction aux méthodes de recherche Cr.Hrs.6 (L'ancien 077.229) Ce cours initie l'étudiant aux méthodes quantitatives et qualitatives d'appréhension des phénomènes sociaux. Il traite des présupposés de l'enquête scientifique, de la conceptualisation des problèmes de recherche, de l'analyse statistique élémentaire et de l'utilisation d'un programme informatisé pertinent. L'étudiant(e) ne peut se faire créditer à la fois le SOC 2291 (077.229) et le SOC 2290 (077.229). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au

l'Université de Saint-Boniface.

**SOC 2311** Choix de problèmes sociaux Cr.Hrs.3 (L'ancien 077.231) Analyse d'un ou de plusieurs problèmes sociaux contemporains (autres que le crime et la délinquance). On pourra examiner, par exemple, des problèmes tels que la pauvreté, la guerre, l'environnement, la consommation de drogues, la mortalité. Pour plus de détails sur le contenu du cours, consulter le guide d'inscription ou s'adresser au professeur. L'étudiant(e) ne peut se faire créditer à la fois le SOC 2311 (077.231) et le SOC 2310 (077.231). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Le contenu variera d'année en année alors l'étudiant(e) peut se faire créditer ce cours plus d'une fois. Donné au l'Université de Saint-Boniface.

**SOC 2321** La société canadienne et sa culture Cr.Hrs.3 (L'ancien 077.232) Ce cours procède à une analyse sociologique des institutions canadiennes en adoptant, comme point de référence, des perspectives historiques, culturelles, économiques et politiques. L'étudiant(e) ne peut se faire créditer à la fois le SOC 2321 (077.232) et le SOC 2320 (077.232). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 2331** Psychosociologie Cr.Hrs.3 (L'ancien 077.233) Ce cours examine la relation entre individu, groupe et société en soulignant l'interaction comme étant le processus qui donne à la vie quotidienne sa forme, sa direction et sa signification. Les sujets discutés peuvent inclure: le soi, le processus de formation de l'identité, la motivation, le contrôle des émotions. L'étudiant(e) ne peut se faire créditer à la fois le SOC 2331 (077.233) et le SOC 2330 (077.233). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 2371** Rapports ethniques Cr.Hrs.3 (L'ancien 077.237) Une introduction aux dimensions sociologiques et socio-psychologiques des rapports ethniques au Canada. L'étudiant(e) ne peut se faire créditer à la fois le SOC 2371 (077.237) et le SOC 2370 (077.237). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 2391** L'organisation sociale Cr.Hrs.3 (L'ancien 077.239) Étude des forces qui influencent la formation de l'ordre dans la société, son maintien et son changement, contrôle social, conflit de pouvoir, intégration. L'étudiant(e) ne peut se faire créditer à la fois le SOC 2391 (077.239) et le SOC 2390 (077.239). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 2461** La famille Cr.Hrs.3

(L'ancien 077.246) Analyse sociologique des diverses formes et pratiques familiales dans les sociétés contemporaines, ainsi que de leur évolution à partir de formes plus anciennes. Sont également étudiés les rapports entre les formes familiales et le contexte social global. L'étudiant(e) ne peut se faire créditer à la fois le SOC 2461 (077.246) et le SOC 2460 (077.246). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 2511** Criminologie Cr.Hrs.3

(L'ancien 077.251) Introduction générale aux théories de comportement déviant et de criminologie. L'explication du crime en se référant aux facteurs physiques, psychologiques et sociaux. L'étudiant(e) ne peut se faire créditer à la fois le SOC 2511 (077.251) et le SOC 2510 (077.251). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 2531** Sociologie du Manitoba Cr.Hrs.6

(L'ancien 077.253) Une étude sociologique de la population du Manitoba avec un accent sur ses regroupements culturels et sa stratification sociale. Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 3331** Origines de la pensée sociologique Cr.Hrs.3

Introduction systématique à la pensée sociologique, de ses origines philosophiques jusqu'au milieu du 19<sup>e</sup> siècle. Examen de la pensée sociale qui deviendra la base de la théorie sociologique. Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)] Et une note minimale de C dans SOC 2221. Donné au l'Université de Saint-Boniface.

**SOC 3371** Sociologie du travail Cr.Hrs.3

(L'ancien 077.337) Vue générale du monde du travail; particulièrement études des attitudes envers le travail, du classement et de l'organisation des occupations et professions, du choix des carrières, du chômage, et des relations du travail et des loisirs. L'étudiant(e) ne peut se faire créditer à la fois le SOC 3371 (077.337) et le SOC 3370 (077.337). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 3391** Théories sociologiques contemporaines Cr.Hrs.3

Comparaison systématique des théories sociologiques contemporaines. L'évolution compétitive des diverses écoles en sociologie et surtout sur l'apport des théoriciens les plus importants. Préalables: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Et une note minimal de C dans SOC 2221. Donné au l'Université de Saint-Boniface.

**SOC 3471** Sociologie politique Cr.Hrs.3

(L'ancien 077.347) Évaluation critique de la théorie et des recherches sociologiques relatives aux rapports de force dans la société. Ce cours traitera des divers aspects du pouvoir (économique, politique, idéologiques), des conflits de classe, de la socialisation, de l'origine, des fonctions et de l'évolution de l'État. L'étudiant(e) ne peut se faire créditer à la fois le SOC 3471 (077.347) et le SOC 3470 (077.347). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 3581** Culture, médias et société Cr.Hrs.3

Étude de l'influence des médias dans les sociétés contemporaines; analyse de la production, de la circulation et de la consommation de diverses formes médiatiques et de leurs impacts sur la vie sociale. Préalables: une note minimale de C dans un des SOC 1201 ou SOC 1200 (ancien 077.120), ou les SOC 1211 (ancien 077.121) et SOC 1221 (ancien 077.122); le SOC 2331 ou SOC 2330 (ancien 077.233) est recommandé.

**SOC 3731** Société et éducation Cr.Hrs.3

(L'ancien 077.373) Un examen critique des enjeux de l'éducation et leur impacte sur l'évolution de la société. On aborde des questions telles que: le curriculum; l'interaction au sein de la classe, compte tenu des caractéristiques socio-économiques des élèves (genre, ethnie, niveau de revenu et profession des parents, etc.). Le cours intéresse particulièrement les personnes qui se préparent à faire carrière en éducation. L'étudiant(e) ne peut se faire créditer à la fois le SOC 3731 (077.373) et le SOC 3730 (077.373). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 3811** Sociologie de la sexualité et des rôles sexuels Cr.Hrs.3

(L'ancien 077.381) Étude exploratoire des rapports entre les hommes et les femmes dans la société contemporaine. Ce cours examine le processus de construction sociale de la sexualité et des rôles sexuels, à travers une perspective historique de comparaison entre les cultures. L'étudiant(e) ne peut se faire créditer à la fois le SOC 3811 (077.381) et le SOC 3810 (077.381). Préalable: [une note minimale de C dans le SOC 1200 (077.120) ou le SOC 1201 (077.120)] ou [une note minimale de C dans tous les deux SOC 1211 (077.121) et SOC 1221 (077.122)]. Donné au l'Université de Saint-Boniface.

**SOC 3871** Inégalités sociales Cr.Hrs.3

(Ancien 077.387) Présentation des inégalités sociales dans la société capitaliste actuelle. Examen critique des explications proposées au sujet des diverses dimensions de l'inégalité sociale telles que: la classe sociale d'appartenance, les rôles sexuels et l'appartenance ethnique. Discussions au sujet de la pauvreté, de la répartition sociale, de la richesse, du chômage, de l'évolution des postes et des contextes de travail à l'ère de la mondialisation. Préalables: une note minimale de C dans SOC 1201 ou SOC 1200 (077.120) ou SOC 1211 (077.121) et SOC 1221 (077.122). On ne peut se faire créditer SOC 3871 et l'ancien SOC 3870 (077.387) ou SOC 3890.



## Faculté des arts-Spanish

### SPAN 1181 Introduction à l'espagnol Cr.Hrs.6

(Anciens 122.118 et TRAD 1181) Pour étudiantes et étudiants n'ayant aucune connaissance de l'espagnol ou n'en ayant qu'une connaissance minime. Accent mis sur le vocabulaire, la grammaire et l'acquisition d'aptitudes orales et écrites au moyen d'exercices divers et de pratique au laboratoire. Activités de laboratoire alternant avec des séances de conversation en groupes. La participation active est une exigence du cours. On ne peut se faire créditer SPAN 1181 (TRAD 1181) et SPAN 1180 (044.118), SPAN 1190 ou SPAN 1280. Les étudiants et les étudiantes qui ont déjà obtenu crédit en SPAN 1261 (TRAD 1261 ou 122.126) ou SPAN 1260(44.126), en SPAN 1271 (TRAD 1271 ou 122.127) ou SPAN 1270 (044.127) ou en SPAN 1290 ne peuvent pas suivre ce cours. Les étudiantes et les étudiants dont l'espagnol est la langue maternelle et ceux qui possèdent déjà les crédits du cours d'espagnol de secondaire 12e année ou l'équivalent ne peuvent s'inscrire à ce cours.

### SPAN 1191 Introduction à l'espagnol II Cr.Hrs.3

(Laboratoire requis) Ce cours est destiné aux étudiants qui connaissent déjà l'alphabet et le système de son espagnols, qui ont une compréhension élémentaire de la langue, et qui maîtrisent une base de la communication et de l'écriture équivalentes à celle qui serait obtenue au cours SPAN 1171. Les étudiants ne peuvent obtenir de crédits pour SPAN 1191 et aucun des cours suivants : SPAN 1190, SPAN 1180 (044.118), ancien SPAN 1181 (ancien TRAD 1181 ou ancien 122.118). Ce cours n'est pas accessible aux étudiants qui ont déjà obtenu des crédits pour SPAN 1262 ou l'ancien SPAN 1260 (044.126) ou SPAN 1261 (ancien TRAD 1261 ou ancien 122.126) ou SPAN 1272 ou l'ancien SPAN 1270 (044.127) ou SPAN 1271 (ancien TRAD 1271 ou ancien 122.127) ou SPAN 1280 ou SPAN 1290. Préalable: SPAN 1171 ou l'autorisation écrite de la professeure ou du professeur.

### SPAN 1261 Espagnol intermédiaire Cr.Hrs.3

(Laboratoire requis) Révision intensive de la grammaire et du vocabulaire étudiés dans SPAN 1171, SPAN 1180 (044.118), l'ancien SPAN 1181 (ancien TRAD 1181, ancien 122.118), SPAN 1190, SPAN 1191, ou en Espagnol 40S. Pratique et perfectionnement des connaissances en classe et au laboratoire. On ne peut se faire créditer SPAN 1261 et aucun des cours suivants : SPAN 1260 (044.126), SPAN 1262, SPAN 1280, SPAN 1290. Préalable : une note minimale de C dans SPAN 1171 et SPAN 1191 ou l'ancien SPAN 1181 (TRAD 1181 ou 122.118) ou SPAN 1180 (044.118) ou SPAN 1190 ou l'équivalent en Espagnol 40S, ou l'autorisation écrite de la professeure ou du professeur.

### SPAN 1271 Espagnol oral I Cr.Hrs.3

(Anciens 122.217 et TRAD 1271) Pour étudiantes et étudiants de niveau intermédiaire qui ne parlent pas couramment l'espagnol et qui souhaitent perfectionner leurs compétences orales (compréhension, correction grammaticale). Pratique intensive de la langue parlée en classe et au laboratoire de langue à partir de thèmes de discussion contemporains et de sujets d'actualité, de politique et de culture, en rapport avec le monde hispanique. On ne peut se faire créditer SPAN 1271 (TRAD 1271 ou 122.217) et SPAN 1270 (44.127), SPAN 1280, ou SPAN 1290. Préalable : une note minimale de C dans SPAN 1261

(TRAD 1261 ou 122.216) ou SPAN 1260 (044.126) ou l'autorisation écrite du professeur.

### SPAN 2361 Espagnol commercial Cr.Hrs.3

(Anciens 122.236 et TRAD 2361) Initiation au vocabulaire commercial et aux techniques d'écriture dans le domaine des affaires. Accent mis sur la composition appliquée au domaine commercial : rédaction de lettres, compte rendus d'activités ou de réunion, etc. Préalable : une note minimale de C dans SPAN 1261 (TRAD 1261 ou 122.126), SPAN 1260 (044.126) ou SPAN 1290 ou l'autorisation écrite de la professeure ou du professeur.

### SPAN 2571 El espanol a través del cine hispanoamericano Cr.Hrs.3

(Anciens 122.257 et TRAD 2571) Les cultures espagnole et latino-américaine à partir d'oeuvres cinématographiques issues de ces cultures. Accent sur la discussion et l'expression orale. Préalable : une note minimale de C dans SPAN 1271 (TRAD 1271 ou 122.127), SPAN 1270 (044.127) ou SPAN 1290 ou l'autorisation écrite de la professeure ou du professeur.

### SPAN 2573 Espagnol sujet spécial I Cr.Hrs.3

Le contenu de ce cours varie en fonction des besoins et des intérêts des étudiants et des professeurs. La formule du tutorat peut être utilisée. Le contenu du cours varie d'année en année. Puisque les contenus varient d'année en année et que le cours se crée selon les besoins des étudiantes et des étudiants, les étudiantes et les étudiants pourraient suivre ce cours plus d'une fois. Préalable: Note minimale de "C" ou plus au cours d'espagnol TRAD 1261 ou le consentement écrit du professeur.

### SPAN 2591 Femmes et culture en Espagne et en Amérique latine Cr.Hrs.3

Panorama de la culture latino-américaine abordée à partir de la production féminine. Étude des oeuvres des femmes, de leurs conditions de production dans une perspective féministe et dans le cadre théorique des études culturelles. Panorama incluant divers pays et diverses époques, ainsi que différents types de production (littérature, cinéma, peinture et sculpture). Préalable: une note minimale de C dans SPAN 1262 (SPAN 1261, TRAD 1261 ou 122,126), l'ancien SPAN 1260 (044,126), SPAN 1280 ou SPAN 1290 ou l'autorisation écrite de la professeure ou du professeur.

### SPAN 2671 Espagnol sujet spécial I Cr.Hrs.3

Cours à contenu variant en fonction des besoins et des intérêts des personnes qui le suivent et de celles qui l'enseignent. La formule de tutorat peut être utilisée. Cours dont le contenu varie d'année en année et pouvant être donc suivi plus d'une fois. Préalable: une note minimale de C dans SPAN 1262 (SPAN 1261, TRAD 1261 ou 122,126), l'ancien SPAN 1260 (044,126), SPAN 1280 ou SPAN 1290 ou l'autorisation écrite de la professeure ou du professeur.

### SPAN 3271 Espagnol sujet spécial II Cr.Hrs.3

Le contenu de ce cours en fonction des besoins et des intérêts des étudiants et des professeurs. La formule du tutorat peut être utilisée. Le contenu des cours varie d'année en année. Puisque les contenus varient d'année en année et que le cours se crée selon les besoins des étudiants et des étudiants, eux ou elles pourraient suivre ce cours plus d'une fois. Préalable: Note minimale de "C" à un cours d'espagnol de niveau 2000 ou le consentement écrit du professeur.



**SPAN 3341** Grammaire et syntaxe de l'espagnol Cr.Hrs.3  
Ce cours comprend une étude approfondie et détaillée de la grammaire et de la syntaxe de l'espagnol. On ne peut se faire créditer à la fois le SPAN 3341 et aucun des cours SPAN 3340, l'ancien SPAN 3280 (044.328). Préalable: Une note de > ou plus dans n'importe quel d'espagnol de niveau 2000 ou le consentement par écrit du professeur.

**SPAN 3461** Littérature et civilisation d'Amérique latine Cr.Hrs.3  
(Anciens 122.316 et TRAD 3461) Initiation aux grands auteurs d'Amérique latine, ainsi qu'aux caractères spécifiques des sociétés latino-américaines : valeurs, pratiques culturelles, mais aussi politiques, commerciales et professionnelles. Préalable : une note minimale de C dans SPAN 1261 (TRAD 1261 ou 122.126) ou SPAN 1260 (044.126).

**SPAN 3561** Cours avancé d'espagnol professionnel Cr.Hrs.3  
(Anciens 122.356 et TRAD 3561) Pratique de la traduction de l'espagnol vers le français vers l'espagnol à partir de textes pragmatiques à caractère professionnel. Préalable : une note minimale de C dans SPAN 2361 (122.236 ou TRAD 2361).

**SPAN 3881** Violence, révolutions et dictatures dans la culture hispanophone Cr.Hrs.3  
Panorama de la culture latino-américaine suivant l'histoire de la violence. On étudiera les manifestations culturelles reliées aux événements qui ont marqué l'histoire de l'Amérique latine: révolutions, guérillas, dictatures. Le contenu du cours se centre sur les manifestations des artistes et d'autres producteurs culturels vis-à-vis de la violence ( apologistes ou pacifistes?). Préalable: Avoir obtenu > ou plus dans au moins un cours d'espagnol de niveau 2000 ou le consentement écrit du professeur.

## Faculté des arts-Theatre

**THTR 1001** Initiation à l'improvisation théâtrale Cr.Hrs.3  
Ce cours vise à initier les étudiants aux aspects fondamentaux de l'improvisation théâtrale. À ce titre, il aborde différents aspects de l'improvisation comme l'expression des sentiments et du corps, la mise en scène, le jeu à partir d'un motif, la créativité, l'écoute du public, la capacité d'attention, l'initiative, la réceptivité, la spontanéité sur scène et l'utilisation des accessoires.

**THTR 1021** Introduction à l'analyse du texte théâtral Cr.Hrs.3  
S'il est indéniable que le texte de théâtre a beaucoup progressé depuis une trentaine d'années, en revanche la pratique du théâtre demeure encore souvent marquée par la difficulté de saisir le texte comme tel, comme s'il fallait toujours s'en remettre à la représentation pour que le texte théâtral soit considéré comme un véritable objet d'études. Ce cours permettra à l'étudiant-e de combler cette lacune tout en l'initiant aux aspects les plus saillants du texte théâtral. On pourra ainsi se demander s'il existe une spécificité du texte de théâtre, si l'étude du théâtre peut se passer de la représentation ou du texte théâtral. Cette investigation permettra d'aborder des questions qui touchent aussi bien à l'organisation et à la structuration du texte théâtral, qu'à la fiction, l'espace, le temps, l'énoncé,

l'énonciation, le personnage et l'action.

**THTR 2521** Art théâtral et techniques de scène Cr.Hrs.3  
Ce cours vise à initier les étudiants aux équipements spécialisés de la scène. Il y sera question d'éclairage (théorie de la lumière et de la couleur, fonctionnement des projecteurs, maîtrise de la console d'éclairage, création d'un ensemble scénique homogène) et des principes de la sonorité (fonctionnement des divers appareils: lecteurs, microphones, amplificateurs, réverbérateurs, etc.). Ce cours abordera aussi la sonorité: théorie du son, éventail de bruitages, utilisation d'effets sonores et de musique dans un spectacle, enregistrement. Enfin, ce cours se penchera sur la question de la régie: direction technique et direction de production théâtrale.

**THTR 2531** Le jeu corporel Cr.Hrs.3  
Ce cours vise à initier les étudiants aux diverses approches du corps comme langage scénique: les rapports entrent le langage et le geste, les fonctions de la gestuelle dans un jeu équilibré. Il sera aussi question des rapports entre le corps et l'espace, le corps et les rythmes. Il s'agira enfin de mettre l'accent sur les grandes tendances qui se dégagent des problématiques actuelles sur les rapports entre le corps et le jeu.

**THTR 2541** L'expression orale au théâtre Cr.Hrs.3  
Étude de l'expression orale et de la communication sous leurs différents aspects. Étude des règles de la prononciation, de l'élocution et de la prosodie de français contemporain. Étude des diverses techniques de l'élocution théâtrale comme moyen de communication et comme moyen de l'art dramatique (registres tragique, dramatique et comique). Analyse des facteurs et des fonctions du langage et de la communication. Initiation aux techniques de lecture à première vue et aux textes à mémoriser. Initiation aux diverses techniques respiratoires et vocales.

**THTR 2551** Improvisation théâtrale Cr.Hrs.3  
Ce cours reprend les grands principes de l'improvisation théâtrale proposés dans le THTR 1000 (Initiation à l'improvisation théâtrale), mais il les applique cette fois à nombre de thématiques, de situations et d'aspects différents du jeu improvisé. À ce titre, ce cours aborde et explore d'autres dimensions de l'improvisation théâtrale, tout en se fondant sur les acquis du cours l'improvisation de première année.

**THTR 3521** Interprétation, voix et expression orale Cr.Hrs.3  
Étude de la voix sur le plan interprétatif et expressif. Les divers rapports entre la voix, l'expressivité individuelle, collective et le spectacle. Les rythmes de la voix (modulations, hésitations, accélérations...). Les rapports entre la voix, le corps et l'espace. Les principes de l'improvisation vocale et du jeu choral.

**THTR 3531** Jeu et caméra Cr.Hrs.3  
Ce cours vise à initier les étudiants au rôle créateur de la caméra. À ce titre, les rapports entre le jeu de l'acteur et les différents types de cadrages relatifs au septième art seront abordés. En outre, il y sera question de compréhension et d'interprétation de scripts, ainsi que de nombreux aspects relatifs au jeu de l'acteur sur un plateau de tournage: scènes de combat, essayage de costumes, apprentissage d'accents étrangers, maniement d'armes, principes de jeu avec des animaux ou des doublures. Du reste, ce cours accordera



une attention particulière à la question des auditions.

**THTR 3541** Le jeu réaliste Cr.Hrs.3

Connaissance théorique et pratique des techniques de jeu réaliste selon la méthode de Stanislavski et de l'Actors' Studio. Le rôle et les fonctions du corps, les techniques de l'identification et de l'incarnation; le rôle des émotions, l'écoute des partenaires de jeu, l'observation, la construction globale du personnage. Techniques et esthétiques du jeu réaliste.

**THTR 3551** Clown et masques Cr.Hrs.3

Ce cours vise à initier les étudiants aux aspects fondamentaux de l'art du clown et du rôle des masques dans l'engagement physique au théâtre. Aussi aborde-t-il les différents aspects du jeu du clown et de la pratique de jeu masqué (théâtre antique, Commedia dell'arte), comme la gestuelle, le langage, le mouvement, l'espace, l'utilisation des accessoires et l'importance de l'intégration du clown à la formation de l'acteur.

**THTR 3561** Scénographie Cr.Hrs.3

Introduction à la scénographie du point de vue historique et évolutif (du théâtre de l'Antiquité grecque au théâtre de la dérision). Introduction au travail d'agencement des moyens techniques et artistiques de la scénographie, en tenant compte des rapports entre le texte théâtral et l'espace de la scène. Mise en relief des différentes étapes de la conception scénographique (décors, costumes, jeu de lumières, effets scéniques, etc.). Réflexion sur le travail de scénographes réputés comme Walter Gropius, Yannis Kokkos et Wieland Wagner.

**THTR 3571** Atelier de théâtre Cr.Hrs.3

Cours d'initiation à la pratique théâtrale dans son ensemble: jeu, scénographie, mise en scène. Ce cours constitue une synthèse de tous les aspects de l'art dramatique en prévision de scènes devant la salle de classe et/ ou pour des invitées à la fin du trimestre. Des aspects incontournables de l'art dramatique figureront au programme de ce cours: la concentration, l'écoute personnelle et collective, le monologue intérieur, la mémoire sensorielle et affective, l'analyse approfondie de scènes, la construction de personnages, le travail à l'extérieur des répétitions ainsi que le comportement lors de répétitions. Préalables: Avoir réussi l'un des deux cours consacrés à l'improvisation (THTR 1001, THTR 2551), 4 cours de 2e année et 2 cours de 3e année.

**THTR 4521** Mise en scène Cr.Hrs.3

Ce cours vise à initier les étudiants aux principes relatifs à la mise en scène. Les rapports entrent l'art de la mise en scène et certaines théories esthétiques seront abordées. également de mettre l'accent sur les grandes tendances qui se dégagent des problématiques actuelles de la mise en scène. Ce cours propose aussi une réflexion critique sur la mise en scène comme forme d'interprétation qui mène à la création théâtrale.

**THTR 4531** Mise en scène II Cr.Hrs.3

Ce cours reprend les principes de Mise en scène 1 et les applique à la dramaturgie, à la scénographie, à différentes esthétiques historiques et au jeu de l'acteur. À ce titre, ce cours permet à l'étudiant de mieux connaître les ressources artistiques et pratiques à la disposition du metteur en scène. À travers une série de travaux pratiques et de projets, l'étudiant pourra parfaire ses connaissances de la mise en scène. Tout en insistant sur les divers aspects de la mise en scène,

ce cours accordera aussi une importance particulière à la direction des acteurs.

**THTR 4541** Jouer les genres théâtraux: comédie, tragédie et drame Cr.Hrs.3

Cours de synthèse dans lequel les étudiants aborderont les techniques de jeu liées aux genres théâtraux: la comédie, la tragédie et le drame. À ce titre, une attention particulière sera apportée à l'action comique, tragique et dramatique sous le rapport des conflits et des renversements de situation, des rythmes vocaux (répliques, interaction entre comédiens), des didascalies, du contexte culturel des oeuvres dramaturgiques et du contexte théâtral en général. Ce cours permettra aussi d'aborder la question de la composition et de l'interprétation d'un personnage, en fonction de la compréhension du texte et des techniques de jeu.

**THTR 4551** Atelier de théâtre et production Cr.Hrs.3

L'objectif de ce cours consiste à produire une pièce de théâtre, soit une création collective, soit une oeuvre de répertoire. La contribution et l'implication des étudiant-e-s seront essentielles car ils devront prendre en charge, sous la supervision du professeur, les divers aspects d'une production théâtrale: publicité, décors, costumes, éclairages, bruitages jeu et, dans une moindre mesure, mise en scène. À ce titre, ce cours donne l'occasion aux étudiant-e-s de mettre en pratique ce qu'ils auront appris dans d'autres cours de la Spécialisation en études théâtrales; ce qui leur permettra d'acquérir à la fois une plus grande autonomie et une expérience indispensable dans le domaine des arts de la scène.

**École de traduction: Traduction-2000 Level**

**TRAD 2071** Grammaire normative Cr.Hrs.6

(L'ancien 122.207) Dans le cadre d'une révision approfondie de la grammaire, l'étudiant apprendra à maîtriser les particularités orthographiques du français. On étudiera les formes et les fonctions des parties du discours en insistant sur le verbe et ses conjugaisons ainsi que sur les règles d'accord et de concordance à l'intérieur de la phrase simple et de la phrase complexe. Préalable: [avoir réussi l'examen d'admission aux programmes de traduction] ou [avoir obtenu la note B à l'issue des cours FRAN 1091 (144.109) et FRAN 1111 (144.111)]. Donnée au l'Université de Saint-Boniface.

**TRAD 2101** Analyse et résumé de textes 1 Cr.Hrs.3

(L'ancien 122.210) Apprentissage des techniques d'analyse et de résumé de textes pragmatiques français de façon à développer l'aptitude interprétative (extraction du sens) et les capacités expressives (reformulation) chez l'étudiant(e). Les textes, écrits ou audiovisuels, touchent à l'actualité et aux divers domaines avec lesquels le traducteur sera appelé à se familiariser. Préalable: [avoir réussi l'examen d'admission] ou [obtenu B+ au FRAN 1111 (144.111)] ou bien avoir reçu l'autorisation écrite du professeur ou de la professeure. Donnée au l'Université de Saint-Boniface.

**TRAD 2111** Informatique et traduction Cr.Hrs.3

(L'ancien 122.211) Introduction à l'usage des ordinateurs en traduction: banques de données terminologiques, dictionnaires électroniques, traduction assistée par ordinateur. Introduction à la traduction automatique. Préalable: avoir réussi l'examen d'admission ou obtenu l'autorisation écrite du professeur ou de la professeure.



Donné au l'Université de Saint-Boniface.

**TRAD 2151** Introduction à la traduction Cr.Hrs.3  
(L'ancien 122.215) Introduction à l'histoire de la traduction et au rôle que celle-ci a joué aux diverses époques. Réflexion sur la responsabilité du traducteur vis-à-vis de ceux qu'il traduit (auteurs, représentants politiques, etc.) et de ses lecteurs. Méthodes et théories en traduction. Initiation à la traductologie. Préalable: avoir réussi l'examen d'admission ou obtenu l'autorisation écrite du professeur ou de la professeure. Donné au l'Université de Saint-Boniface.

**TRAD 2301** Culture générale 1 Cr.Hrs.3  
(L'ancien 122.230) Cours autodidactique pluridisciplinaire. L'étudiant(e) établit son corpus à partir d'une liste de lecture et en accord avec le(la) responsable de son programme d'étude. Donné au l'Université de Saint-Boniface.

### École de traduction: Traduction-3000 Level

**TRAD 3011** Lexicologie comparée Cr.Hrs.3  
(L'ancien 122.301) Étude des domaines abordés par la lexicologie et comparaison des structures lexicosémantiques de l'anglais et du français dans l'optique de la traduction. Ce cours abordera entre autres des notions telles que la contextualisation; la cooccurrence; les interférences linguistiques (anglicismes, gallicismes, faux amis); et la modulation lexicale en traduction. Préalable: avoir réussi l'examen d'admission ou obtenu l'autorisation du professeur ou de la professeure. Donné au l'Université de Saint-Boniface.

**TRAD 3051** Syntaxe comparée Cr.Hrs.3  
(L'ancien 122.305) Étude contrastive des structures syntaxiques de l'anglais et du français dans l'optique de la traduction. Apprentissage des techniques de transfert et particulièrement de la transposition syntaxique à l'aide de nombreux exercices pratiques. Correction des problèmes de syntaxe provenant d'interférences linguistiques; calques, mauvais emplois des prépositions, des temps, etc. L'étudiant ou l'étudiante ne peut se faire créditer le TRAD 3051 (122.305) et l'ancien 044.363. Préalable: avoir réussi l'examen d'admission ou obtenu l'autorisation du professeur ou de la professeure. Donné au l'Université de Saint-Boniface.

**TRAD 3101** Analyse et résumé de textes 2 Cr.Hrs.3  
(L'ancien 122.310) Pratique des techniques d'analyse et de résumé à partir de textes français ou anglais. La reformulation en français sera l'occasion d'un exercice intellectuel proche de la traduction. Les recherches documentaires viseront non seulement à l'amélioration des connaissances générales mais aussi à l'établissement de glossaires. Préalable: une note minimale de C dans le TRAD 2101 (122.210). Donné au l'Université de Saint-Boniface.

**TRAD 3111** Laboratoire 1 Cr.Hrs.3  
(L'ancien 122.311) Ce cours a pour but de donner la possibilité aux étudiants de pratiquer leur futur métier dans des conditions semblables à ce qu'elles seront dans un bureau de traduction (qualité du produit fini, présentation, échéances, etc.) tout en étant guidés par leur professeur qui jouera ici le rôle de réviseur. Les textes pourront être des articles susceptibles d'être utiles aux professeurs de diverses matières au CUSB. Le laboratoire s'étendra sur toute l'année, à raison de 3 heures par semaine. Préalables:

une note minimale de C dans les TRAD 2101 (122.210) et TRAD 3101 (122.310). Donné au l'Université de Saint-Boniface.

**TRAD 3121** Lexicographie comparée Cr.Hrs.3  
(L'ancien 122.312) Étude contrastive de dictionnaires unilingues et bilingues anglais/français. Lecture de manuels de lexicographie et comparaison de divers dictionnaires unilingues et bilingues. Préalable: avoir réussi l'examen d'admission ou obtenu l'autorisation écrite du professeur ou de la professeure. Donné au l'Université de Saint-Boniface.

**TRAD 3131** Terminologie bilingue et documentation Cr.Hrs.3  
(L'ancien 122.313) Initiation aux diverses méthodes d'acquisition de la documentation permettant une application à la traduction: utilisation des encyclopédies, des ouvrages et des revues spécialisées à des fins terminologiques. Apprentissage de l'utilisation des banques de données et établissement de fiches terminologiques. Préalables: [une note minimale de C dans TRAD 2101 (122.210) et TRAD 3101 (122.310)] ou une note minimale de C dans TRAD 2151 ou l'autorisation écrite du professeur ou de la professeure. Donné au l'Université de Saint-Boniface.

**TRAD 3141** Rédaction professionnelle comparée I Cr.Hrs.3  
(L'ancien 122.314) Étude comparative de documents professionnels anglais et français afin de mettre en lumière les différences qui peuvent exister dans les méthodes de présentation ou d'expression en anglais et en français. L'étudiant(e) devra ensuite produire des textes professionnels variés (lettres, procès-verbaux, curriculum vitae, etc.). Préalables: [une note minimale de C dans les TRAD 3101(122.310) ou dans TRAD 2151, ou l'autorisation écrite du professeur ou de la professeure. Donné au l'Université de Saint-Boniface.

**TRAD 3261** Traduction générale (anglais-français) Cr.Hrs.3  
(L'ancien 122.326) Mise en pratique des principes de traduction introduits dans le cours TRAD 2151 (122.215) (Introduction à la traduction) auquel il fait suite. Les textes à traduire seront de nature générale et porteront sur divers domaines de l'actualité et de la vie professionnelle. Préalable: une note minimale de C dans le TRAD 2151 (122.215). Donné au l'Université de Saint-Boniface.

**TRAD 3271** General Translation (French-English) Cr.Hrs.3  
(L'ancien 122.327) Apprendre et appliquer les règles de base de la traduction vers l'anglais de textes français d'intérêt général. Par une approche analytique du sens, découvrir les principaux aspects du maniement du langage pour pouvoir saisir les idées d'un message et leur articulation, et les reformuler en exploitant les ressources de l'anglais. Préalable: une note minimale de C dans au moins un des cours suivants: le ENGL 2000 (004.200) ou le ENGL 2001 (004.200) ou le TRAD 2101 (122.210) ou le TRAD 2151 (122.215). Donné au l'Université de Saint-Boniface.

**TRAD 3281** Sujets particuliers Cr.Hrs.3  
(L'ancien 122.328) Le contenu de ce cours peut changer en fonction des besoins et des intérêts des étudiants et des professeurs. Préalable: [un cours (3 crédits) avec une note minimale de C de niveau 2000] ou l'autorisation du professeur. Donné au l'Université de Saint-Boniface.

**TRAD 3301** Culture générale II Cr.Hrs.3  
(L'ancien 122.330) Cours autodidactique pluridisciplinaire.



L'étudiant(e) établit son corpus à partir d'une liste de lecture et en accord avec le(la) responsable de son programme d'étude. Préalable: une note minimale de C dans le TRAD 2301 (122.230). Donnée à l'Université de Saint-Boniface.

### École de traduction: Traduction-4000 Level

**TRAD 4011** Atelier de traduction professionnelle Cr.Hrs.3 (L'ancien 122.401) Travaux pratiques de traduction en atelier où la simulation des conditions réelles de travail devra permettre à l'étudiant(e) d'améliorer sa productivité sous le rapport du temps et de la qualité. Préalable: [une note minimale de C dans le TRAD 3261 (122.326) ou TRAD 3271 (122.327) et une note minimale de C dans TRAD 3131 ou l'autorisation écrite du professeur ou de la professeure. Donnée à l'Université de Saint-Boniface.

#### **TRAD 4031** Analyse du discours I Cr.Hrs.3

Le discours comme réseau de relation, fait de langage et fait social. Son inscription dans le schéma de la communication. Initiation à la théorie de communication. La notion de littérarité selon plusieurs modèles théoriques, notamment la théorie de réception et le modèle marxiste. Application à l'analyse de textes littéraires et pragmatiques. Un étudiant ou une étudiante ne peut se faire créditer le TRAD 4031 et l'ancien TRAD 4021 (122.402). Préalable: l'autorisation écrite du professeur ou du chef de département de français ou de traduction.

#### **TRAD 4033** Analyse du discours II Cr.Hrs.3

Le discours comme réseau de relation, fait de langage et fait social. Son inscription dans le schéma de la communication. Initiation à la théorie de communication. La notion de littérarité selon plusieurs modèles théoriques, notamment la sémiotique et les perspectives psychanalytiques. Application à l'analyse de textes littéraires et pragmatiques. Un étudiant ou une étudiante ne peut se faire créditer le TRAD 4031 et l'ancien TRAD 4021 (122.402). Préalable: l'autorisation écrite du professeur ou du chef de département de français ou de traduction.

#### **TRAD 4051** Révision Cr.Hrs.3

(L'ancien 122.405) Principes de la révision. Vérification et d'amélioration de textes traduits. Exercices comparatifs et raisonnés, il apprendra pour développer les facultés analytiques, le sens critique et l'habileté à manier la langue d'arrivée. Préalable: une note minimale de C dans le TRAD 3261 (122.326)] ou l'autorisation écrite du professeur ou de la professeure.

#### **TRAD 4061** Terminologie appliquée Cr.Hrs.3

(L'ancien 122.406) Travaux pratiques destinés à renforcer l'efficacité et la qualité des recherches documentaires et terminologiques exigées de l'étudiant(e) par la traduction de textes spécialisés. Préalable: une note minimale de C dans le TRAD 3131 (122.313). Donnée à l'Université de Saint-Boniface.

#### **TRAD 4071** Mémoire de traduction Cr.Hrs.3

(L'ancien 122.407) Travail indépendant, s'étendant sur deux semestres ou plus, sous la direction d'un professeur. L'étudiant ou l'étudiante devra démontrer qu'il est capable de mener une recherche documentaire et terminologique à des fins traductionnelles. Pour ce faire, il ou elle réalisera une traduction commentée d'un texte d'au moins 3000 mots répondant aux exigences de la profession. La traduction

sera nécessairement accompagnée d'une analyse textuelle et d'un lexique élaboré à partir du texte à traduire. Préalables: [une note minimale de C dans le TRAD 3261 (122.326) ou le TRAD 3271 (122.327)] et [une note minimale de C dans le TRAD 3131 (122.313)]. Donnée à l'Université de Saint-Boniface.

#### **TRAD 4081** Sous-titrage Cr.Hrs.3

(L'ancien 122.408) Le cours présente un survol des processus traductologiques et techniques du sous-titrage. Il comprend également un volet pratique sur la traduction cinématographique en utilisant des sous-titres. Préalable: une note minimale de C dans un des cours suivants: le TRAD 4251 (122.425) ou le TRAD 4091 (122.409) ou le TRAD 4281 (122.428). Donnée à l'Université de Saint-Boniface.

#### **TRAD 4091** Gestion d'un service de traduction Cr.Hrs.3

(L'ancien 122.409) Principes de base de la gestion appliquée à un service de traduction. Gestion et la coordination des équipes en réseau Internet, tant sur le plan national qu'international. Préalable: une note minimale de C dans le TRAD 2151 (122.215) et TRAD 3261 (122.326) ou TRAD 3271 (122.327).

#### **TRAD 4101** Mémoire de terminologie Cr.Hrs.3

(L'ancien 122.410) Travail de recherche supervisé en terminologie de l'École de traduction. Recherche thématique sur un sujet et élaboration de fiches terminologiques. Approfondissement de ses compétences dans la manipulation des bases de données terminologiques, leur mise à jour et leur enrichissement. Préalables: une note minimale de B dans TRAD 3131 (122.313) ou TRAD 4061 (122.406). Donnée à l'Université de Saint-Boniface.

#### **TRAD 4111** Laboratoire II Cr.Hrs.3

(L'ancien 122.411) Ce cours est semblable au TRAD 3111 (122.311), se donne en même temps et selon des modalités semblables. Laboratoire II vise à donner une deuxième année de pratique aux étudiants inscrits dans l'un des cours de traduction spécialisée. Les étudiants en Laboratoire II auront à traduire les textes qui présentent le plus de difficultés. Préalable: une note minimale de C dans le TRAD 3111 (122.311). Donnée à l'Université de Saint-Boniface.

#### **TRAD 4141** Rédaction professionnelle comparée 2 Cr.Hrs.3

(L'ancien 122.414) Étude comparative de documents professionnels anglais et français. Rédaction, en français, de documents professionnels tels que rapports, documents journalistiques ou juridiques. Préalable: une note minimale de C dans le TRAD 3141 (122.314). Donnée à l'Université de Saint-Boniface.

#### **TRAD 4231** Translation in the Social Sciences Cr.Hrs.3

(L'ancien 122.423) Révision et pratique des principes de la traduction à partir de textes français appartenant au domaine des sciences sociales. Établissement de dossiers documentaires et de fiches terminologiques bilingues. Préalable: une note minimale de C dans le TRAD 3271 (122.327) et TRAD 3131. Donnée à l'Université de Saint-Boniface.

#### **TRAD 4241** Legal Translation Cr.Hrs.3

(L'ancien 122.424) Révision et pratique des principes de la traduction vers à partir de textes français appartenant au domaine juridique. Établissement de dossiers documentaires et de fiches terminologiques dans ces domaines. Préalable:



une note minimale de C dans le TRAD 3271 (122.327) et TRAD 3131. Donné au l'Université de Saint-Boniface.

**TRAD 4251** Literary Translation Cr.Hrs.3

(L'ancien 122.425) Révision et pratique des principes de la traduction vers l'anglais à partir de textes littéraires français. Analyse du style et des modes d'expression et recherche d'équivalences en langue d'arrivée. Préalable: une note minimale de C dans le TRAD 3271 (122.327). Donné au l'Université de Saint-Boniface.

**TRAD 4261** Initiation à l'interprétation Cr.Hrs.3

(L'ancien 122.426) Etant donné la croissance constante de la demande dans le domaine de l'interprétation, les étudiants auront avantage à suivre ce cours qui leur permettra de se familiariser avec la traduction orale. Dans ce cours, l'accent sera mis sur la qualité de l'expression orale, tant en anglais qu'en français, les interprètes travaillant en effet toujours dans les deux sens. Préalables: une note minimale de C dans le TRAD 3261 (122.326) et le TRAD 3271 (122.327). Donné au l'Université de Saint-Boniface.

**TRAD 4263** Théories de la traduction Cr.Hrs.3

Étude des courants théoriques contemporains dans le domaine de la traduction, allant des sourcistes aux ciblistes. Accent particulier mis sur les approches intermédiaires, qui font ressortir la place du traducteur, des institutions, etc. dans le modèle. Préalable: réussite d'au moins deux cours de traduction de niveau 3000.

**TRAD 4271** Scientific and Technical Translation Cr.Hrs.3

(L'ancien 122.427) Révision et application des principes de la traduction vers l'anglais à partir de textes appartenant aux domaines scientifiques et techniques. Établissement de dossiers documentaires et terminologiques dans ces domaines. Préalable: une note minimale de C dans le TRAD 3271 (122.327) et TRAD 3131. Donné au l'Université de Saint-Boniface.

**TRAD 4273** Traduction biomédicale et pharmaceutique Cr.Hrs.3

Le cours portera sur l'analyse et la traduction de différents textes genres de textes dans le domaine biomédical et pharmaceutique. Il mettra l'accent sur les systèmes notionnels, terminologiques et phraséologiques propres au domaine et sur le développement d'une démarche d'exploitation de connaissances spécialisées. Préalable: une note minimale de C dans TRAD 3261 (122.326) et TRAD 3131.

**TRAD 4281** Adaptation publicitaire Cr.Hrs.3

(L'ancien 122.428) Initiation à l'adaptation et à la traduction de textes publicitaires. Apprentissage des méthodes de modulation intralinguistique et interlinguistique de l'énoncé publicitaire en fonction de facteurs linguistiques, affectifs et sociaux. Donné au l'Université de Saint-Boniface.

**TRAD 4361** Traduction spécialisée (anglais-français) Cr.Hrs.3

(L'ancien 122.436) Révision et application des principes de la traduction vers le français de textes pragmatiques anglais appartenant à divers domaines de spécialisation. Préalable: une note minimale de C dans le TRAD 3261 (122.326) et Trad 3131. Donné au l'Université de Saint-Boniface.

**TRAD 4371** Specialized Translation (French-English) Cr.Hrs.3

(L'ancien 122.437) Réviser et appliquer les principes de la traduction vers l'anglais de textes pragmatiques français appartenant à divers domaines de spécialisation. Préalable: une note minimale de C dans le TRAD 3271 (122.327) et TRAD 3131. Donné au l'Université de Saint-Boniface.

**TRAD 4381** Traduction en sciences sociales (anglais-français) Cr.Hrs.3

(L'ancien 122.438) Familiarisation avec le langage propre aux sciences sociales et qui tient compte de méthodes de recherche et d'analyse bien définies, tant en anglais qu'en français et auquel on aura recours chaque fois que le texte de départ l'exigera, tout en enrichissant sa culture générale. Préalable: une note minimale de C dans TRAD 3261 (122.326) et TRAD 3131. Donné au l'Université de Saint-Boniface.

**TRAD 4391** Traduction juridique (anglais-français) Cr.Hrs.3

(L'ancien 122.439) Révision et application des principes de la traduction vers le français de textes juridiques anglais appartenant à divers aspects du droit: textes législatifs, règlements, textes de jurisprudence, de doctrine, contrats. Préalable: une note minimale de C dans le TRAD 3261 (122.326) et TRAD 3131. Donné au l'Université de Saint-Boniface.

**TRAD 4401** Traduction littéraire (anglais-français) Cr.Hrs.3

(L'ancien 122.440) Application des principes de la traduction vers le français à des textes littéraires. Analyse des procédés stylistiques anglais et recherche d'équivalences en français. Pratique de la rédaction expressive. Préalable: une note minimale de C dans le TRAD 3261 (122.326). Donné au l'Université de Saint-Boniface.

**TRAD 4411** Traduction scientifique et technique (anglais-français) Cr.Hrs.3

(L'ancien 122.441) Révision et application des principes de la traduction vers le français à partir de textes appartenant aux domaines scientifiques et techniques. Établissement de dossiers documentaires et terminologiques dans ces domaines. Préalable: une note minimale de C dans le TRAD 3261 (122.326) et TRAD 3131. Donné au l'Université de Saint-Boniface.

**TRAD 4421** Traduction commerciale et économique (anglais-français) Cr.Hrs.3

(L'ancien 122.442) Révision et application des principes de la traduction vers le français de textes pragmatiques spécialisés dans les domaines du commerce et de l'économie. Établissement de lexiques bilingues et enrichissement des connaissances de l'étudiant(e) dans ce domaine de spécialisation. Pratique de rédaction en style commercial. Préalable: une note minimale de C dans le TRAD 3261 (122.326) et TRAD 3131. Donné au l'Université de Saint-Boniface.

**TRAD 4501** Initiation à la localisation Cr.Hrs.3

(L'ancien 122.450) Utilisation de divers outils informatiques indispensables à la localisation est l'adaptation de logiciels pour des publics très variés. Réflexion sur le rôle du traducteur au sein de l'équipe linguistique et technique. Préalable: une note minimale de C dans TRAD 2111 (122.211) et dans l'un ou l'autre de TRAD 3261 (122.326) ou TRAD 3271 (122.327) ou l'autorisation du professeur ou de la professeure. Donné au l'Université de Saint-Boniface.

**TRAD 4531** Traduction militaire Cr.Hrs.3

Le cours portera sur l'étude des textes relatifs aux différents aspects de la vie militaire (différents corps d'armes: terre, air, marine), les grades militaires, les armes, l'histoire militaire, le rôle de l'armée dans la société moderne. Préalable: une note minimale de B dans TRAD 2111 (122.211) et TRAD 2151 (122.215) et TRAD 3261 (122.326) et TRAD 3271 (122.327) et TRAD 4411 (122.441).

**École d'administration des affaires-  
Accounting(ACC)**

**ACC 1101** Introduction à la comptabilité financière Cr.Hrs.3 (L'ancien 009.110) Analyse des termes, des principes et des concepts utilisés dans la préparation d'états financiers. On ne peut se faire créditer à la fois le ACC 1101 et ACC 1100. Donné au l'Université de St. Boniface.

**ACC 1111** Introduction à la comptabilité de management Cr.Hrs.3 (L'ancien 009.111) L'importance des méthodes comptables dans la gestion de l'information utilisées par la direction d'une entreprise. Préalable: ACC1101 (D) ou ACC 1100 (D) (ou 009.110) (D). Préalable ou concomitant: [ECON 1200 (D) ou ECON 1201 (D) (ou 018.120) (D)] ou [ECON 1010 (D) et ECON 1020 (D) ou ECON 1021 (D) ]. Donné au l'Université de St. Boniface.

**ACC 2011** Comptabilité intermédiaire-Actifs Cr.Hrs.3 Cadre théorique de la comptabilité relatif aux principes et procédures d'analyse et mesure des actifs. Analyse comptable approfondie des postes de l'actif: encaisse, créances, stocks, placements, immobilisations corporelles et incorporelles et amortissement. Préalable: ACC 1101 (ou l'ancien 009.110) avec une note minimal de C+.

**ACC 2021** Comptabilité intermédiaire - Capitaux propres et Passifs Cr.Hrs.3 Cadre théorique de la comptabilité relatif aux capitaux propres avec une considération du traitement comptable des passifs à court et à long termes, régimes de retraite, locations impôts sur les bénéfices, actions, droits, etc. Modifications comptables. Préalable: ACC 2011 (ou l'ancien 009.201).

**ACC 3041** Compatibilité de coûts Cr.Hrs.3 Utilité de la comptabilité de management et prise de décision, concepts de coûts. systèmes de coûts, budgets, contrôle budgétaire, gestion décentralisée. analyse de la performance financière. Préalable: ACC 1111 (ou l'ancien 009.111).

**ACC 4031** Théorie comptable Cr.Hrs.3 Évolution de la théorie comptable, processus de normalisation et influence du milieu sur son cheminement, étude des modèles de mesure des bénéfices, théorie d'agence, hypothèse de l'efficacité des marchés de capitaux, etc. Préalable: ACC 2011 (ou l'ancien 009.201) et ACC 2021 (ou l'ancien 009.202) ou avec l'approbation du représentant de secteur.

**École d'administration des affaires-  
Actuarial Studies(ACT)**

**ACT 2321** Mathématiques financières Cr.Hrs.3 L'étude de l'intérêt composé et des rentes discrètes et continues; équations de valeur, analyse de fonds; détermination de taux de rendement; construction de tables. L' étudiant (e) ne peut se faire créditer à la fois le 010.232 et le 010.332. Donné au l'Université de St. Boniface. Préalable: MATH 1500 ou MATH 1501 (ou 136.150) (D) ou MATH 1520 (ou 136.152) (D), ou l'équivalent.

**École d'administration des affaires-  
Entrepreneurship/Small Business(ENTR)**

**ENTR 4511** Entrepreneurship et création d'entreprises Cr.Hrs.3 (L'ancien 118.451) Ce cours porte sur la création d'entreprise. Lancement d'entreprise; caractéristiques de l'entrepreneur; plan d'entreprise; définition du projet; détermination du marché; fonctions administratives; problèmes particuliers au lancement d'entreprise, aide gouvernementale. On ne peut se faire créditer ce cours avec le ENTR 4100 (ou 118.410). Préalable: ACC 1101 (D) ou ACC 1100 (ou 009.110) (D) et MKT 2211 (D) ou MKT 2210 (ou 118.221) (D), et [GMGT 2030 (ou 027.203) (D) ou GMGT 2061 (D) ou GMGT 2060 (D) ou (GMGT 2081 (D)) ou GMGT 2080 (ou 027.208) (D)].

**École d'administration des affaires-  
Finance(FIN)**

**FIN 2201** Gestion financière Cr.Hrs.3 (L'ancien 009.220) Introduction aux principes de la gestion financière de l'entreprise en particulier dans le choix du financement, le choix de l'investissement et la gestion des fonds. Préalables; [ACC 1101 (D) ou ACC 1100 (D) (009.110) (D) ] [ MATH 1500 (C) ou MATH 1501 (C) ou MATH 1520 (C) ] [STAT 1001 (C) ou STAT 1000 (C) (005.100) (C) ] et [ ( ECON 1201 (C) ou ECON 1200 (C) (018.120) (C) ) ou [ (ECON 1010 (C) ou ECON 1011 (C) et ECON 1020 (C)) ou (ECON 1021 (C) )].Donné au l'Université de St. Boniface.

**FIN 3451** Finance Internationale Cr.Hrs.3 (Ancien 009.345) Introduction à l'étude des aspects internationaux du financement d'une compagnie et des marchés internationaux de capitaux. Préalable: FIN 2201 (ancien 009.220) avec une note minimale de C+.

**École d'administration des affaires-General  
Management(GMGT)**

**GMGT 1011** Les entreprises et la société Cr.Hrs.3 Analyse de la nature, du rôle, de l'impact et de l'importance des entreprises dans la société. Les activités internes des entreprises (ex. finances, marketing, opérations) seront discutées, mais la majorité du cours étudiera des relations entre les entreprises et les parties prenantes clés dans l'environnement externe (y inclut les gouvernements, les



propriétaires, les clients, les communautés, les fournisseurs, et les générations à venir). Le étudiant et les étudiantes examineront les contextes institutionnels variés (ex. économiques, politico-légaux, et socioculturels) et appliqueront la pensée critique aux relations entre entreprises et la société, avec considération des modèles alternatifs de gestion. Accent sur les sujets sociaux contemporains en management (ex. le développement durable, la responsabilité sociale des entreprises). On ne peut se faire créditer à la fois le GMGT 1010.

**GMGT 2011** Business Communications and Critical Thinking Cr.Hrs.3

(Lab required) An introduction to theoretical, cultural and ethical bases of effective communication. Students will develop interpersonal, oral and written communication skills at individual, group and organizational levels and will also develop analytical, problem-solving, rhetorical and critical thinking abilities required in organizational and business settings. Recommend that GMGT 2011 be taken in their first 30 credit hours. Not to be held for credit with GMGT 2010 or GMGT 2001 or GMGT 2000.

**GMGT 2061** Management et théorie des organisations Cr.Hrs.3

Analyse des principaux concepts qui sous-tendent la formation des organisations et leur gestion interne. L'accent est mise sur l'analyse des différentes approches théoriques relatives à la théorie des organisations et au management. On ne peut se faire créditer à la fois le GMGT 2061 et un des cours suivants: GMGT 2060, GMGT 2081, GMGT 2080, GMGT 2030. Préalable: GMGT 1011 ou GMGT 1010.

**GMGT 2071** Introduction au comportement organisationnel Cr.Hrs.3

(L'ancien 027.207) Analyse de l'impact du comportement humain sur l'organisation formelle et informelle. Les sujets traités sont le leadership, les groupes de travail, les conflits au sein de l'organisation et la communication. Préalable: GMGT 1011 ou GMGT 1010. Donné au l'Université de St. Boniface.

**GMGT 2081** Introduction au management et à la théorie de l'organisation Cr.Hrs.3

(L'ancien 027.208) Analyse des principaux concepts régissant la formation d'organisations et leur gestion interne. L'accent est mis sur l'analyse de différentes approches théoriques concernant l'organisation et sa gestion. L'étudiant (e) ne peut se faire créditer à la fois le GMGT 2080 (ou 027.208) et le GMGT 2030 (ou 027.203). Donné au l'Université de St. Boniface.

**GMGT 2121** Les entreprises et le gouvernement Cr.Hrs.3

(L'ancien 027.212) Analyse des rapports entre le gouvernement et les entreprises au niveau de la conception, de la modification et de la mise en place des politiques gouvernementales affectant l'entreprise. Analyse des moyens dont disposent les entreprises pour influencer la prise de décision des gouvernements. Donné au l'Université de St. Boniface. Préalable: ECON 1200 ou ECON 1201 ou 018.120) (D).

**GMGT 2141** Introduction aux communications Cr.Hrs.3

(L'ancien 027.214) Communication orale dans le milieu des affaires. Rédaction de documents écrits venant appuyer les activités d'écoute et de parole. Apprentissage des connaissances grammaticales, syntaxiques et lexicales.

Apprendre à s'exprimer en public. Donné au l'Université de St. Boniface.

**GMGT 3301** Droit commercial Cr.Hrs.3

(L'ancien 027.330) Sommaire historique du droit, organisation des tribunaux, constitution du Canada, attributions législatives du gouvernement fédéral et des assemblées provinciales. Notions juridiques et problèmes attendants à: l'organisation des entreprises, la rédaction des contrats, le mandant et le mandataire, les effets négociables, les débits et les procédures de faillite. Donné à l'Université de St. Boniface.

**GMGT 3561** Séminaire en management Cr.Hrs.3

(L'ancien 027.356) Analyse de la gestion d'organisation: Réflexion critique sur des sujets d'actualité pertinents. L'étudiant(e) ne peut se faire créditer à la fois le GMGT 3561 (ou 027.356) et le GMGT 3020 (ou 027.302) ou le GMGT 3560. Préalable: GMGT 2061 (D) ou GMGT 2060 (D) ou GMGT 2081 (D) ou GMGT 2080 (ou 027.208) (D) et GMGT 2071 (D) ou GMGT 2070 (ou 027.207) (D).

**GMGT 3581** Éthique et responsabilité sociale Cr.Hrs.3

(L'ancien 027.358) Le rôle social de l'entreprise. L'environnement interne et externe de l'entreprise; les problèmes sociaux et les activités de responsabilité sociale; l'éthique professionnelle du gestionnaire contemporain, la comptabilité sociale; les groupes défavorisés; etc. Donné au l'Université de St. Boniface. Préalable: GMGT 2070 (ou 027.207) (D).

**GMGT 4011** Gestion stratégique des organisations Cr.Hrs.3

(L'ancien 027.401) Étude de la gestion stratégique des organisations. L'étude de cas permettra à l'étudiante ou à l'étudiant d'intégrer les connaissances acquises tout en mettant l'accent sur les questions qui entourent l'élaboration des stratégies et la gestion des politiques établies. Ce cours ne sera suivi qu'à la fin du programme ou avec l'autorisation écrite du professeur ou de la professeure. Donné au l'Université de St. Boniface.

**GMGT 4121** Commerce International Cr.Hrs.3

(Ancien 027.412) Étude des échanges internationaux à travers les politiques économiques internationales, les ententes régionales, les tarifs commerciaux, les institutions internationales et le financement des échanges.

**GMGT 4151** Gestion des organisations sans but lucratif Cr.Hrs.3

(Ancien 027.415) Description et analyse de la dynamique des organismes sans but lucratif (OSBL) : leur environnement spécifique, leur fonctionnement interne et leurs modes d'intervention dans la communauté. Approfondissement de la compréhension de la spécificité du secteur tertiaire, ce qui rend apte à y intervenir efficacement soit en tant que gestionnaires, soit en tant que bénévoles. Préalables : GMGT 2061 ou GMGT 2060, GMGT 2081 ou GMGT 2080 (027.208), GMGT 2071 ou GMGT 2070 (027.207), HRIR 2440 ou HRIR 2441 (027.244). On ne peut pas obtenir de crédits à la fois pour GMGT 4151 et GMGT 4150.

**GMGT 4551** Développement d'habiletés de gestionnaire Cr.Hrs.3

(L'ancien 027.455) Développement de certaines habiletés nécessaires au succès professionnel. Les principaux apprentissages sont: la gestion du stress, la communication



orale, la négociation, la recherche d'emploi, les techniques de créativité et d'innovation, la gestion des relations vie privée/vie professionnelle. Donné au l'Université de St. Boniface. Préalable: GMGT 2070 (ou 027.207) (D).

## École d'administration des affaires-Human Resources/Industrial Relations(HRIR)

**HRIR 2441** Gestion des ressources humaines 1 Cr.Hrs.3 (L'ancien 027.244) Introduction au système de gestion des ressources humaines. Les sujets abordés ont trait à: la planification, l'analyse de postes, la formation, la gestion de la diversité, la gestion des carrières. l'évaluation du rendement, l'acquisition des ressources humaines, les modes de reconnaissance et la problématique de la gestion des ressources humaines dans un contexte en constant changement. On ne peut se faire créditer à la fois le HRIR 2441 et le HRIR 2440. Donné au l'Université de St. Boniface.

**HRIR 3511** Gestion des ressources humaines 2 Cr.Hrs.3 (L'ancien 027.351) La planification des tâches, la structuration des rôles et du travail, la coordination et la réalisation des activités feront l'objet d'un apprentissage théorique associé au développement d'habiletés. Donné au l'Université de St. Boniface. Préalable: HRIR 2440 (ou 027.244) (D).

**HRIR 3541** Gestion des équipes de travail Cr.Hrs.3 (L'ancien 027.354) Initiation à la gestion des équipes de travail en mettant l'accent sur les dimensions humaines et administratives du travail en équipe. Donné au l'Université de St. Boniface. Préalable: GMGT 2070 (ou 027.207) (D).

**HRIR 4411** Dotation et développement des ressources humaines Cr.Hrs.3 (L'ancien 027.441) Le cours est une analyse approfondie et pratique des problèmes de dotation et de développement des ressources humaines au sein des organisations. À travers ce cours, les étudiant(e)s développeront leurs habiletés d'intervention dans des domaines tels que la planification des emplois, le recrutement et la sélection, l'évaluation de la performance, l'analyse des besoins de formation, l'implantation et le contrôle d'un programme de formation, etc. Préalable: HRIR 2440 (ou 027.244) (D).

**HRIR 4421** Rémunération Cr.Hrs.3 (L'ancien 027.442) Ce cours est une analyse des principaux concepts et des systèmes de rémunération incluant: stratégie, équité salariale, compétitivité, reconnaissance des contributions individuelles, incitatifs de performance, avantages sociaux, politiques gouvernementales, rôle des syndicats dans la rémunération, incidences et gestion du processus de rémunération. Préalable: HRIR 2440 (ou 027.244) (D).

**HRIR 4481** La négociation collective Cr.Hrs.3 (L'ancien 027.448) Ce cours est une analyse des éléments et enjeux de la négociation collective et de la gestion des conventions collectives et une analyse du cadre juridiques des négociations publiques et privées. Le système canadien de relations industrielles est comparé à d'autres systèmes nationaux. Préalable: HRIR 3450 (ou 027.345) ou l'ancien

027.341 (D).

**HRIR 4511** Gestion de la diversité Cr.Hrs.3 (L'ancien 027.451) La gestion de la diversité du point de vue historique, social, légal et opérationnel. L'influence de la diversité de la main-d'oeuvre sur les politiques, les pratiques et les procédures de l'organisation. Modèle du développement organisationnel pluraliste relié à un ensemble de systèmes sociaux. Donné au l'Université de St. Boniface. Préalable: HRIR 2440 (ou 027.244) (D).

**HRIR 4521** Relations industrielles et gestion des ressources humaines comparées Cr.Hrs.3 (Ancien 027.452) Perspective internationale des relations industrielles (RI) et de la gestion des ressources humaines (GRH) par l'analyse et l'étude comparée des systèmes de relations industrielles et des pratiques de gestion des ressources humaines dans certains pays ainsi que des développements actuels. Théories et questions pertinentes à cette matière. Préalable recommandé mais non obligatoire : le HRIR 3451 (ancien 027.345) ou l'ancien 027.341.

**HRIR 4531** Gestion du changement Cr.Hrs.3 (L'ancien 027.453) Changement et développement organisationnel: processus de changement, agent de changement. Domaines d'intervention: changements dans l'environnement et l'organisation, processus sociaux, culture d'entreprise, techno-structure, qualité de vie au travail. Dilemmes et perspectives. Donné au l'Université de St. Boniface. Préalable: HRIR 2440 (ou 027.244) (D).

**HRIR 4541** Innovations en gestion des ressources humaines Cr.Hrs.3 (L'ancien 027.454) Présentation des nouveaux courants en gestion des ressources humaines, en examiner les fondements, en présenter les modèles d'implantation et en faire une analyse critique. Donné au l'Université de St. Boniface. Préalable: HRIR 2440 (ou 027.244) (D).

## École d'administration des affaires-International Business(INTB)

**INTB 3001** Gestion interculturelle Cr.Hrs.3 Mise en évidence de l'influence de facteurs culturels sur les pratiques de gestion et la vie des entreprises. Présentation des dimensions de la culture de chaque pays étudié (religion, valeurs, normes, histoire, etc.) et développement d'outils pour faciliter l'adaptation des employés étrangers dans ces pays et le développement d'une communication interculturelle efficace avec leurs ressortissants. Préalable: GMGT 2071 (ou l'ancien 027.207) Introduction au comportement organisationnel.

**INTB 4501** Cultures du monde Cr.Hrs.3 (L'ancien 027.450) Un aperçu des principales cultures du monde. Étude des relations entre la culture d'un peuple et ses rapports économiques internationaux. Donné au l'Université de St. Boniface.

**INTB 4581** Problèmes contemporains en gestion internationale Cr.Hrs.3 (Ancien 027.458) Étude des thèmes relatifs aux problèmes et aux défis que pose la gestion dans un contexte international. Le contenu du cours peut varier d'une année à l'autre en fonction de l'actualité, des besoins et des intérêts



de la clientèle étudiante. Préalable : INTB 2201 (027.220) ou GMGT 4121 (027.412) ou l'autorisation écrite de la professeure ou du professeur.

### École d'administration des affaires- Management Info Systems(MIS)

**MIS 2001** Les systèmes d'information de gestion Cr.Hrs.3 (L'ancien 009.200) (Laboratoire requis) Introduction aux systèmes d'information dans les organisations, au développement et à l'acquisition des systèmes et à la gestion des systèmes d'information. On ne peut se faire créditer le MIS 2001 et le MIS 2000.

### École d'administration des affaires- Marketing(MKT)

**MKT 2211** Principes de marketing Cr.Hrs.3 (L'ancien 118.221) Analyse des problèmes précis de marketing, l'accent étant mis sur l'analyse de différentes façons de maximiser les bénéfices dans le processus de la distribution des biens et des services; le marketing et la société. Donnée au l'Université de St. Boniface.

**MKT 3221** Recherche en marketing Cr.Hrs.3 (Ancien 118.322) Étude de la planification et de la mise en oeuvre de la recherche comme exigence ou prendre des décisions éclairées en marketing. Préalables: [MKT 2211 (118.221) ou le MKT 2210] et [STAT 2000 ou STAT 2001 (005.200)].

**MKT 3231** Comportement du consommateur Cr.Hrs.3 (L'ancien 118.323) Étude de l'influence de l'environnement et de l'influence individuelle sur le comportement du consommateur. Donnée au l'Université de St. Boniface. Préalable: MKT 2210 (ou 118.221) (D).

**MKT 3291** Publicité Cr.Hrs.3 Analyse du rôle et de la gestion de la publicité dans le cadre du plan marketing. Théorie de la communication et la formulation de messages publicitaires, établissement du budget, la sélection des médias et l'analyse de l'efficacité de la publicité. Donnée au l'Université de St. Boniface. Préalable: 18.221 (D).

**MKT 3301** Marketing international Cr.Hrs.3 (Ancien 118.330) Analyse comparée des structures, des fonctions et des processus de marketing dans des environnements sociaux, culturels et économiques variés. Diagnostic de l'environnement externe et élaboration des stratégies de marketing mix international. Préalable : MKT 2211 (ancien 118.221).

**MKT 4211** Gestion du marketing Cr.Hrs.3 (Ancien 118.421) Examen des stratégies et des tactiques marketing que les managers utilisent pour leurs produits et services à différents niveaux du cycle de vie du produit. Utilisation des analyses qualitatives et quantitatives pour développer la pensée critique essentielle à la prise de décision en marketing. Ne peut être pris qu'en dernière année du programme. Préalables: [(MKT 3221 ou MKT 3220 (118.332) ou (MKT 3230 (118.323))] et un cours additionnel de marketing niveau 3000 ou 4000: et [ACC 1111 ou ACC

1110 (ancien 009.111).]

**MKT 4271** Administration des ventes Cr.Hrs.3 (L'ancien 118.427) Analyse de l'administration de la vente personnelle, y compris l'analyse la fonction-vente, la supervision de la force de vente et la gestion des ventes. Donnée au l'Université de St. Boniface. Préalable: MKT 2210 (ou 118.221) (D).

### École d'administration des affaires-Supply Chain Mangement(MSCI)

**MSCI 2151** Introduction aux sciences de la gestion Cr.Hrs.3 (Ancien 164.215) Introduction aux techniques et modèles des sciences de la gestion. Les sujets traités incluent la programmation linéaire, les problèmes d'affectation et de transport, la théorie de la décision et les files d'attente. On ne peut se faire créditer le MSCI 2151, le MSCI 2150, 164.215, 021.215 ou le ABIZ 2520. Préalables: [MATH 1520 (ou 136.152) (C) ou MATH 1501 (C) ou MATH 1500 (ou 136.150) (C) ou l'équivalent et STAT 1001 (C) ou STAT 1000 (ou 005.1100) (C) ou l'équivalent.

**MSCI 3401** Sciences de la gestion 2 Cr.Hrs.3 (L'ancien 164.340) Modèles de la recherche opérationnelle utilisés dans l'analyse de problèmes de gestion. Les sujets traités incluent les réseaux, les problèmes d'inventaire du point de vue déterministe, la programmation dynamique, la théorie des jeux. On ne pourra se faire créditer ce cours avec l'ancien 027.340. Préalables: MSCI 2150 (ou 164.215) (D) ou le consentement du professeur.

### École d'administration des affaires-Supply Chain Mangement Operations(OPM)

**OPM 2601** Principes de gestion des opérations et de la production Cr.Hrs.3 (L'ancien 164.260) Étude des notions de base en gestion des opérations et de la production, systèmes de production, conception de système, analyse et contrôle. Donnée au Université de Saint-Boniface. On ne pourra se faire créditer ce cours avec l'ancien 027.260. Préalable ou corequis: STAT 1000 (ou 005.100) (D) ou l'équivalent.

**OPM 4611** Gestion de projets Cr.Hrs.3 Étude de la gestion de projets. Définition et contexte d'application de la gestion de projets. Techniques, approches et outils de gestion d'un projet en fonction de la structure organisationnelle de l'entreprise et des contraintes de temps, coût et qualité. Préalable: GMGT 2081 Introduction au management et à la théorie de l'organisation et OPM 2601 Principes de la gestion des opérations et de la production.

### École d'administration des affaires-Supply Chain Management (SCM)

**SCM 2161** Gestion de la chaîne logistique et des opérations Cr.Hrs.3 Étude de la gestion de la chaîne logistique (GCL) et des opérations. Positionne la gestion des opérations comme un



domaine d'étude fondamental à l'intérieur de la GCL. Se focalise sur l'approche processus et la conception de système. L'étudiant (e) qui détient les crédits du SCM 2161 ne peut se faire créditer aucun des cours OPM 2601 (ancien 027.260) ou OPM 2600 (ancien 164.260) ou SCM 2160.

## Faculté des sciences-Biology

**BIOL 1001** Biologie : Les fondements de la vie Cr.Hrs.3 (Ancien 071.100) Étude de certains principes unificateurs de la vie. Attention particulière à la biologie cellulaire, à la bioénergétique, à la division cellulaire, à la génétique et à l'évolution. Ne peut être utilisé dans un programme de majeure ou de spécialisation. On ne peut se faire créditer BIOL 1001 et BIOL 1000 (071.100) et BIOL 1020 ou BIOL 1021 (071.125, 071.201). Préalable : Mathématiques 40S ou le cours Mathematic Skills (50%) enseigné par la Division de l'éducation permanente. Donné seulement au l'Université de Saint-Boniface.

**BIOL 1011** Biologie : La diversité biologique et ses interactions Cr.Hrs.3 (Ancien 071.101) Introduction à la diversité (les procaryotes, les protistes, les champignons, les plantes et les animaux), à la forme et à la fonction des plantes et des animaux ainsi qu'aux principaux concepts de l'écologie. Ne peut être utilisé dans un programme de majeure ou de spécialisation. On ne peut se faire créditer BIOL 1011 et BIOL 1010 (071.101) et BIOL 1030 ou BIOL 1031 (071.125, 071.201). Préalable : Mathématiques 40S ou le cours Mathematic Skills (50%) enseigné par la Division de l'éducation permanente. Donné seulement au l'Université de Saint-Boniface.

**BIOL 1021** Biologie I: Thèmes et Principes Cr.Hrs.3 (Labo requis) (Ancien 071.102) Les principes unificateurs à la base de la biologie dont la biologie cellulaire, la bioénergétique, la division cellulaire, la génétique et l'évolution. Pour ceux et celles qui veulent suivre un programme de sciences biologiques avec majeure ou spécialisation. On ne peut se faire créditer BIOL 1021 et BIOL 1020, BIOL 1001, BIOL 1000 (071.100) ou BIOE 2590 (034.259) ou les anciens 071.125, 071.123, 071.201. Préalables: Biologie 40S (ou l'équivalent), un cours de Mathématiques 40S (ou l'équivalent) et un des deux cours suivants : Chimie 40S ou Physique 40S (ou l'équivalent); ou BIOL 1001 ou BIOL 1000 avec une note minimale de C). Si BIOL 1001 (BIOL 1000) sert de préalable à BIOL 1021 (BIOL 1020), on ne peut se faire créditer BIOL 1001 et BIOL 1021 dans le cadre d'un programme. Donné l'Université de Saint-Boniface.

**BIOL 1031** Biologie II: Diversité Biologique, Fonction et Interaction Cr.Hrs.3 (Labo requis) Introduction à la biodiversité dont les eucaryotes, les protistes, les champignons, les plantes et les animaux, la forme et la fonction des plantes et des animaux et les principes de base de l'écologie. Pour ceux et celles qui veulent suivre un programme de sciences biologiques avec majeure ou spécialisation. On ne peut se faire créditer BIOL 1031 et BIOL 1030 et BIOL 1011, BIOL 1000 (071.101) ou BIOE 2590 (034.259) ou 071.125, 071.123, 071.201. Préalable : une note minimale de C dans BIOL 1021 ou BIOL 1020. NOTE : BIOL 1031 est préalable au cours de biochimie (CHEM 2361) et aux cours plus avancés de microbiologie, et à la plupart des cours de sciences biologiques. Il prépare aussi aux études en agriculture, en

sciences alimentaires, en dentisterie, en écologie humaine, en médecine, en optométrie, en pharmacie, en sciences vétérinaires, en éducation physique et en sciences. Donné seulement au l'Université de Saint-Boniface.

**BIOL 1411** Anatomie du corps humain Cr.Hrs.3 Discussions sur la micro-anatomie et la macro-anatomie incluant les changements qui se produisent de la conception à la vieillesse. Bien que ce cours fasse partie des cours au choix dans un programme en arts ou en sciences, il ne peut rencontrer les exigences de la spécialisation ni du programme de majeure en sciences biologiques. Aucun préalable n'est requis pour ce cours mais le cours de biologie du niveau secondaire est vivement recommandé. On ne peut se faire créditer BIOL 1411 et BIOL 1410. Donné seulement à l'Université de Saint-Boniface.

**BIOL 1413** Physiologie de corps humain Cr.Hrs.3 (ancien ZOO 1331,002.133) L'étude des fonctions de tous les systèmes ainsi que les mécanismes de normalisation homéostatique feront partis des thèmes de base étudiés. Bien que ce cours fasse partie des cours au choix dans un programme en arts ou en sciences, il ne peut rencontrer les exigences de la spécialisation ni du programme de majeure en sciences biologiques. On ne peut se faire créditer BIOL 1413 et BIOL 1412, BIOL 2411 (ou équivalent-ZOOL 2530, BIOL 2410, ZOO 2531,002.254) Préalable: Une note minimale de C dans BIOL 1410 ou 1411 (ZOO 1320, 002.132)(C); ou une note minimale de C dans BIOL 1030 ou BIOL 1031 ou l'ancien 071.125 (C). Ce préalable ne concerne pas les étudiantes et étudiants dans le programme de Baccalauréat pour les infirmières enregistrées et infirmiers enregistrés.

**BIOL 2201** Les invertébrés Cr.Hrs.3 (Labo requis) (Anciens ZOO 2601 et 022.260) Étude phylogénétique et biologique des invertébrés insistant sur les taxa et les groupes qui ont une importance phylogénétique particulière. On ne peut se faire créditer BIOL 2201 et BIOL 2200 (ZOO 2601, ZOO 2600, 022.260). Préalable : une note minimale de C dans BIOL 1031 ou BIOL 1030 (071.125). Donné seulement au l'Université de Saint-Boniface.

**BIOL 2231** L'évolution et la structure morphologique des chordés Cr.Hrs.6 (Labo requis) (Anciens ZOO 2501 et 022.250) Étude de l'histoire évolutive de la structure et des adaptations des chordés basée sur les animaux fossilisés et sur les animaux vivants. Établissement des bases pour l'étude des groupes majeurs de chordés. On ne peut se faire créditer BIOL 2231 et BIOL 2210 et ZOO 2501 (022.250) ou ZOO 2320 (022.232). Préalable : une note minimale de C dans BIOL 1031 ou BIOL 1030 (071.125). Donné seulement au l'Université de Saint-Boniface.

**BIOL 2261** Les champignons et les lichens Cr.Hrs.3 (Labo requis) Une introduction aux champignons et aux lichens. L'accent est mis sur les groupes taxinomiques majeurs, leur organisation et leurs structures, leurs cycles de vie, leur identification et leur importance écologique générale. On ne peut se faire créditer BIOL 2261 et BIOL 2260 et BOTN 2210 ou 001.321. Préalables : BIOL 1011 ou BIOL 1010 (071.101) ou 71.123 avec une note minimale de B; ou BIOL 1031 ou BIOL 1030 (071.125) avec une note minimale de C. Donné seulement au l'Université de Saint-



Boniface.

**BIOL 2301** Principes D'écologie Cr.Hrs.3  
(Labo requis) (Anciens BOTN 2371, ZOOL 2371, 001.237 et 022.237) Principes d'écologie au niveau de l'individu, de la population, de la communauté et de l'écosystème. Également offert à la Faculté de sciences de l'agriculture et de nutrition de l'Université du Manitoba sous la cote AGECE 2370. On ne peut se faire créditer BIOL 2301 et BIOL 2300 (ZOOL 2371, ZOOL 2370, 022.237, BOTN 2371, BOTN 2370, 001.237) et AGECE 2370 (065.237) ou BIOL 2390 (ZOOL 2290, 022.229, BOTN 2280, 001.228). Préalable : une note minimale de C dans BIOL 1031 ou BIOL 1030 (071.125). Préalable ou concomitant : une note minimale de D dans STAT 1001 ou STAT 1000 (005.100). Donné seulement au l'Université de Saint-Boniface.

**BIOL 2381** Introduction à la Toxicologie Cr.Hrs.3  
Un survol des principes généraux à la base des effets des substances toxiques sur les systèmes biologiques, tout en prenant en considération l'histoire, l'étendue et les applications de la toxicologie, les mécanismes d'action des toxines et certains types majeurs de toxines. On ne peut se faire créditer le BIOL 2381 et BIOL 2380 et BIOL 2382 (BOTN 2190, ZOOL 2190, 001.219, 022.219), ENVR 2190 (128.219) ou AGRI 2190 (065.219). Préalables: une note minimale de C dans BIOL 1031 ou BIOL 1030 (071.125) et un de CHEM 1311 ou CHEM 1310 (002.131) ou CHEM 1320 (002.132) avec une note minimale de C. Donné seulement au l'Université de Saint-Boniface.

**BIOL 2411** Physiologie du corps humain 1 Cr.Hrs.3  
(Ancien ZOOL 2531 ou 022.253) Étude des principaux mécanismes de contrôle du corps (systèmes nerveux et endocrinien) ainsi que des systèmes musculaire et reproducteur. On ne peut se faire créditer le BIOL 2411 et le BIOL 2410 ou l'ancien ZOOL 2531 ou ZOOL 2530 (ou 022.253), ou le ZOOL 3530 (ou 022.353). Préalable : une note minimale de C dans le BIOL 1031 ou BIOL 1030 (ou 071.125) ou une note minimale de C+ dans BIOL 1001 ou BIOL 1000 (ou 071.100) et BIOL 1011 ou BIOL 1010 (ou 071.101) ou une note minimale de C dans le BIOL 1412 ou l'ancien ZOOL 1330 (ou 022.133). Donné seulement à l'Université de Saint-Boniface.

**BIOL 2421** Physiologie du corps humain II Cr.Hrs.3  
(Anciens ZOOL 2541 et 022.254) Étude de la régulation homéostatique par les systèmes effecteurs du corps (cardiovasculaire, respiratoire, digestif, rénal et immunitaire). On ne peut se faire créditer BIOL 2421 et BIOL 2420 (ZOOL 2541, 022.254). Préalable : une note minimale de D dans BIOL 2411 ou BIOL 2410 (ZOOL 2531, ZOOL 2530, 022.253) ou un D dans BIOL 3460 (ZOOL 3530, 022.353) ou l'autorisation écrite de la professeure ou du professeur. Donné seulement au l'Université de Saint-Boniface.

**BIOL 2501** Génétique I Cr.Hrs.3  
(Labo requis) (Anciens BOTN 2461 et 001.246) Principes de l'hérédité, de la gamétogénèse et des fondements cytologiques de la transmission héréditaire chez les plantes et les animaux. Concepts de dominance et d'interaction génétique, de détermination du sexe, de la transmission des caractères liés au sexe et des gènes liés, variations chromosomiques, génétique des populations et code génétique. On ne peut se faire créditer BIOL 2501 et BIOL 2500 (BOTN 2461, BOTN 2460, 001.246) ou PLNT 2520

(039.252). Préalable : une note minimale de C dans BIOL 1031 ou BIOL 1030 (071.125). NOTE : Ce cours ne peut pas être reconnu en microbiologie (MBIO). Donné seulement au l'Université de Saint-Boniface.

**BIOL 2521** Biologie cellulaire Cr.Hrs.3  
(Anciens ZOOL 2281 et 022.228) Étude de la fonction des organites cellulaires conjointement avec leur structure microscopique ou leur ultrastructure, en insistant sur l'ensemble de la vie cellulaire en tant que système dynamique. On ne peut se faire créditer BIOL 2521 et BIOL 2520 (ZOOL 2281, ZOOL 2280, 022.228). Préalable : une note minimale de C dans BIOL 1031 ou BIOL 1030 (071.125). Donné seulement au l'Université de Saint-Boniface.

**BIOL 3291** Plantes médicinales et hallucinogènes Cr.Hrs.3  
Un survol botanique et historique des plantes médicinales, hallucinogènes et toxiques utilisées dans diverses cultures. On ne peut se faire créditer BIOL 3291 et BIOL 3290. Préalables: Minimum de 30 heures crédits universitaires ou le consentement du Département. Donné seulement à l'Université de Saint-Boniface.

**BIOL 3301** Biologie évolutive Cr.Hrs.3  
(Labo requis) (Ancien BOTN 3001 ou ZOOL 3001) Introduction aux sujets principaux et aux méthodes de recherche en biologie évolutive. Les sujets incluent : génétique évolutive, adaptation, spéciation et reconstruction de l'histoire de l'évolution. On ne peut se faire créditer BIOL 3301 et BIOL 3300 (ZOOL 3001, ZOOL 3000, BOTN 3001, BOTN 3000, 022.400). Préalables: une note minimale de C dans BIOL 2501 ou BIOL 2500 (BOTN 2461, BOTN 2460, 001.246) ou PLNT 2520 (039.252) et un cours parmi les suivants (avec une note minimale de C) : BIOL 2240 (BOTN 2110, 001.211), BIOL 2261 ou BIOL 2260 (BOTN 2210, 001.221), BIOL 3260 (BOTN 2290, 001.229), BIOL 2210 (ZOOL 2320, 022.232), BIOL 2231 (ZOOL 2501, 022.250), BIOL 2201 ou BIOL 2200 (ZOOL 2601, ZOOL 2600, 022.260), ou l'autorisation du professeur ou de la professeure. Donné seulement au l'Université de Saint-Boniface.

**BIOL 3501** Génétique 2 Cr.Hrs.3  
(Labo requis) Ce cours est le complément du cours d'introduction à la génétique BIOL 2501 (ou BOTN 2461, BOTN 2460, 001.246) et présente les divers aspects de la liaison génique et la recombinaison génique, la fonction des gènes, l'allélisme, les mutations et la réparation, l'utilisation des bactéries et des virus comme outils génétique, les bases de la génétique du développement et l'hérédité extranucléaire. On ne peut se faire créditer le BIOL 3501 et BIOL 3500. Préalable : une note minimale de C dans un de BIOL 2501 ou BIOL 2500 (BOTN 2461, BOTN 2460, 001.246) ou PLNT 2520 (039.252, 039.209). Préalable ou concomitant : un de CHEM 2371 ou CHEM 2370 (002.237), MBIO 2371 ou MBIO 2370 (060.237), CHEM 2780 (002.278) ou MBIO 2780 (060.278) ou le consentement du département. Donné seulement à l'Université de Saint-Boniface.

**BIOL 3561** Histologie Animale Comparée Cr.Hrs.3  
(Labo requis) (Anciens ZOOL 3061 et 022.306) Étude de l'organisation cellulaire et tissulaire des animaux, de la morphologie cellulaire, de la spécialisation, des types de tissus et de l'organisation cellulaire et tissulaire de tous les systèmes. Accent mis sur les mammifères, mais des études



comparatives avec d'autres groupes animaux seront aussi incluses. On ne peut se faire créditer BIOL 3561 et BIOL 3560 (ZOO 3061, ZOO 3060, 022.306, 022.347). Préalable : une note minimale de C dans BIOL 1031 ou BIOL 1030 (071.125). Préalable conseillé : un de BIOL 2210 (ZOO 2320, 022.232), BIOL 2231 (ZOO 2501, 022.250), BIOL 2521 ou BIOL 2520 (ZOO 2281, ZOO 2280, 022.228). Donné seulement au l'Université de Saint-Boniface.

## Faculté des sciences-Chemistry

**CHEM 1301** Université I Chimie : La structure et la modélisation chimique Cr.Hrs.3 (Labo requis) (Ancien 002.130) Structure et modèles atomiques et leurs applications à la chimie, y inclus une étude des états solide, liquide et gazeux des substances chimiques et des mélanges. On ne peut se faire créditer CHEM 1301 et CHEM 1300 (002.130). Préalables : Mathématiques 40S (Mathématiques appliquées ou Précalcul), et Chimie 40S (ou son équivalent), ou CHEM 0900 (002.090)(P) ou CHEM 1000 (002.100) avec une note minimale de B. NOTE : Ceux et celles qui s'inscrivent à CHEM 1301 et qui n'ont pas réussi CHEM 0900 doivent subir un test diagnostique durant la première semaine de cours. On conseille fortement à ceux et celles qui obtiennent moins de 60 % dans ce test de suivre CHEM 0900 avant CHEM 1301. CHEM 0900 est un cours de rattrapage en chimie offert occasionnellement à l'Université du Manitoba. Donné seulement au l'Université de Saint-Boniface.

**CHEM 1311** Université I Chimie : Une introduction à la chimie physique Cr.Hrs.3 (Labo requis) (Ancien 002.131) La thermochimie, la thermodynamique chimique, la cinétique chimique. On ne peut se faire créditer CHEM 1311 et CHEM 1310 (002.131). Préalable : une note minimale de C dans CHEM 1301 ou CHEM 1300 (002.130). Donné seulement au l'Université de Saint-Boniface.

**CHEM 2211** Introduction à la chimie organique I : Structure et fonction Cr.Hrs.3 (Labo requis) (Ancien 002.221) Introduction aux concepts de réactivité organique et de liaison chez les molécules organiques. Préparation et propriétés de molécules organiques renfermant un groupe fonctionnel. On ne peut se faire créditer CHEM 2211 et CHEM 2210 (002.221) et CHEM 1320 (002.132). Préalable : une note minimale de C dans CHEM 1311 ou CHEM 1310 (002.131). Donné seulement au l'Université de Saint-Boniface.

**CHEM 2221** Introduction à la chimie organique II : Réactivité et synthèse Cr.Hrs.3 (Labo requis) (Ancien 002.222) Introduction à la réactivité des composés organiques et à la spectroscopie organique. L'application de l'interchangeabilité des groupes fonctionnels dans les synthèses de composés. On ne peut se faire créditer CHEM 2221 et CHEM 2220. Préalable : une note minimale de C dans CHEM 2211 ou CHEM 2210 (002.221). Donné seulement au l'Université de Saint-Boniface.

**CHEM 2281** Chimie physique : Étude microscopique de la matière Cr.Hrs.3 (Labo requis) (Ancien 002.228) Approche basée sur le plan moléculaire pour comprendre les propriétés physiques de la matière. Introduction aux principes de la mécanique

quantique, de la structure électronique et de la liaison, de la spectroscopie moléculaire. On ne peut se faire créditer CHEM 2281 et CHEM 2280. Préalables : une note minimale de C dans CHEM 1311 ou CHEM 1310 (002.131); et une note minimale de C dans un de PHYS 1031, PHYS 1030 (016.103), PHYS 1071 ou PHYS 1070 (016.107), et 6 crédits de niveau 1000 en mathématiques (de préférence Calcul), à l'exception de 136.100, MATH 1010 (136.101), MATH 1190, MATH 1191 (136.119), MATH 1020 (136.102), et FA 1020 (054.102). Donné seulement au l'Université de Saint-Boniface.

**CHEM 2291** L'énergétique et la dynamique chimique : Description macroscopique Cr.Hrs.3 (Labo requis) (Ancien 002.229) L'énergétique chimique, l'entropie et la deuxième loi de la thermodynamique, la dynamique chimique. On ne peut se faire créditer CHEM 2291 et CHEM 2290 . Préalables : une note minimale de C dans CHEM 1311 ou CHEM 1310 (002.131) et une note minimale de C dans un de PHYS 1031, PHYS 1030 (016.103), PHYS 1071 ou PHYS 1070 (016.107), et 6 crédits de niveau 1000 en mathématiques (de préférence Calcul) à l'exception de 136.100, MATH 1010 (136.101), MATH 1191, MATH 1190 (136.119), MATH 1020 (136.102) et FA 1020 (054.102). Donné seulement au l'Université de Saint-Boniface.

**CHEM 2361** Biochimie I : Les molécules biochimiques et une introduction à l'énergie métabolique Cr.Hrs.3 (Labo requis) (Ancien 002.236) Introduction aux différents types moléculaires rencontrés en biochimie ainsi qu'au concept d'énergie métabolique comme produit du catabolisme nécessaire à la biosynthèse. Aussi offert par le Département de microbiologie sous la cote MBIO 2361. On ne peut se faire créditer CHEM 2361 et CHEM 2360 (002.236) et CHEM 2770 (002.277), MBIO 2361, MBIO 2360 (060.236) ou MBIO 2770 (060.277). Préalables : une note minimale de C dans CHEM 1311 ou CHEM 1310 (002.131) et une note minimale de C dans BIOL 1031 ou BIOL 1030 (071.125). NOTE : CHEM 2361 ne peut être reconnu aux fins des 12 crédits requis par le département de chimie pour les étudiantes et les étudiants inscrits à Université 1 avant 2007-2008. Pour les personnes qui suivent les nouveaux règlements du baccalauréat général (2008-2009), CHEM 2361 peut faire partie des 18 crédits de chimie ou de microbiologie de niveau avancé. Donné seulement au l'Université de Saint-Boniface.

**CHEM 2371** Biochimie II : Catabolisme, synthèse et les voies d'information Cr.Hrs.3 (Labo requis) (Ancien 002.237) Introduction aux processus métaboliques cellulaires de base incluant la production et l'utilisation de l'énergie métabolique, la dégradation et la synthèse des molécules biochimiques, la synthèse de l'ADN, de l'ARN et des protéines et la régulation de ces processus. Aussi offert par le Département de microbiologie sous la cote MBIO 2371. On ne peut se faire créditer CHEM 2371 et CHEM 2370 (002.237) et CHEM 2780 (002.278), MBIO 2371, MBIO 2370 (060.237) ou MBIO 2780 (060.278). Préalables : une note minimale de C dans un de CHEM 2361, CHEM 2360 (002.236), MBIO 2361 ou MBIO 2360 (060.236) et dans CHEM 2211 ou CHEM 2210 (002.221). NOTE : CHEM 2371 ne peut être reconnu aux fins des 12 crédits requis par le département de chimie pour les étudiantes et les étudiants inscrits à Université 1 avant 2007-2008. Pour les personnes qui suivent les nouveaux règlements du baccalauréat général (2008-2009), CHEM



2371 peut faire partie des 18 crédits de chimie ou de microbiologie de niveau avancé. Donnée seulement au l'Université de Saint-Boniface.

**CHEM 2381** Chimie des éléments représentatifs Cr.Hrs.3 (Labo requis) (L'ancien 002.238) Chimie descriptive des éléments représentatifs et interprétation de leurs propriétés physiques et chimiques d'après les théories habituelles de structure et de liaison. On ne peut se faire créditer à la fois le CHEM 2380 (002.238). Préalable: CHEM 1310 ou CHEM 1311 (ou 002.131) (C). Donnée seulement au l'Université de Saint-Boniface.

**CHEM 2401** Chimie inorganique: structure et applications Cr.Hrs.3  
Revue de la liaison chimique, de la structure et de la réactivité à travers le tableau périodique des éléments. La revue sera illustrée par des exemples liant la chimie inorganique à la science des matériaux et à la biochimie. Pour le laboratoire, des composés inorganiques simples seront préparés et analysés. On ne peut se faire créditer CHEM 2401 et CHEM 2400 et CHEM 2381 ou 2380. Préalable: une note minimale de C dans CHEM 1311 ou CHEM 1310 (002.131)

**CHEM 2471** Introduction à la chimie analytique Cr.Hrs.3 (Labo requis) (Ancien 002.247) Un cours de chimie analytique quantitative fournit une formation utile à presque tous les scientifiques. Ce cours outille les étudiants et étudiantes avec les principes théoriques à la base des méthodes analytiques, avec l'habileté de planifier et d'exécuter des expériences, et ensuite d'interpréter les résultats. On ne peut se faire créditer CHEM 2471 et CHEM 2470. Préalables : une note minimale de C dans CHEM 1311 ou CHEM 1310 (002.131) et un cours de 3 crédits de Mathématiques à l'exception de l'ancien 136.100, MATH 1010, MATH 1190, MATH 1191, MATH 1020 ou FA 1020. Donnée à l'Université de Saint-Boniface.

**CHEM 3571** Chimie biophysique Cr.Hrs.3  
L'application de la chimie physique aux problèmes biologiques avec l'emphase sur l'interprétation quantitative. Les sujets comprennent la cinétique enzymatique, la bioénergétique, les processus de transport ainsi que la spectroscopie. Préalables : CHEM 2361 ou CHEM 2360, MBIO 2361 ou MBIO 2360 (060.237) et MATH 1501 ou MATH 1500 (ou l'équivalent). CHEM 2281 ou CHEM 2280 est recommandé.

**CHEM 4361** Signalisation et régulation de l'expression génétique Cr.Hrs.3 (Ancien 002.436) Biochimie de la réponse cellulaire aux stimuli externes, en mettant l'accent sur les animaux. Les récepteurs à la surface des cellules, les ligands, la signalisation au noyau, la phosphorylation, la protéolyse, la transcription et les gradients dans le typage cellulaire. On ne peut se faire créditer CHEM 4361 et CHEM 4360. Préalable : une note minimale de C dans un de CHEM 2371, CHEM 2370 (002.237), MBIO 2371 ou MBIO 2370 (060.237) (ou 002.235, 060.235). Donnée seulement au l'Université de Saint-Boniface.

**CHEM 4371** Glycobiologie et activation des protéines Cr.Hrs.3 (Ancien 002.437) Le rôle des biomolécules contenant des glucides en biochimie et leur importance dans la connaissance des maladies génétiques. L'importance de la

protéolyse limitée dans l'activation des biomolécules. On ne peut se faire créditer CHEM 4371 et CHEM 4370 et 002.449. Préalable : une note minimale de C dans un de CHEM 2371, CHEM 2370 (002.237), MBIO 2371 ou MBIO 2370 (060.237) (ou 002.235, 060.235). Donnée seulement au l'Université de Saint-Boniface.

**CHEM 4621** Biochimie des acides nucléiques Cr.Hrs.3 (Ancien 002.462) La structure des acides nucléiques; synthèse et détermination des séquences. Interactions avec les protéines et les médicaments. On ne peut se faire créditer CHEM 4621 et CHEM 4620. Préalable : une note minimale de C dans un de CHEM 2371, CHEM 2370 (002.237), MBIO 2371 ou MBIO 2370 (060.237) (ou 002.235, 060.235). Donnée seulement au l'Université de Saint-Boniface.

**CHEM 4631** Biochimie des protéines Cr.Hrs.3 (Ancien 002.463) Les structures et fonctions des protéines, leurs propriétés physiques et chimiques et les méthodes utilisées pour les étudier. On ne peut se faire créditer CHEM 4631 et CHEM 4630. Préalable : une note minimale de C dans un de CHEM 2371, CHEM 2370 (002.237), MBIO 2371 ou MBIO 2370 (060.237) (ou 002.235, 060.235). Donnée seulement au l'Université de Saint-Boniface.

**CHEM 4711** Projet de recherche en chimie ou biochimie Cr.Hrs.6  
Un projet de recherche dans n'importe quel aspect de la chimie ou de la biochimie, choisi en consultation avec l'administrateur du cours ou un superviseur approprié de la Faculté. Des rapports écrits et des présentations orales à la fin du projet seront nécessaires. Cours normalement offert seulement lors de leur dernière année du programme de chimie. On ne peut se faire créditer CHEM 4711 et CHEM 4710 et MBIO 4530 (60.453). Préalable : permission de l'administrateur du cours. Donnée seulement au l'Université de Saint-Boniface.

## Faculté des sciences-Computer Science

**COMP 1011** Introduction à l'informatique I Cr.Hrs.3 (Labo requis) (Ancien 074.101) Introduction à la programmation par un langage procédural évolué. On ne peut se faire créditer plus d'un cours parmi les suivants: le COMP 1010 et les anciens 074.112, 074.121, 074.123 ou 074.125. Donnée seulement au Université de Saint-Boniface. Préalable: N'importe quel cours de mathématiques de 12e année ou de niveau 40S, ou l'équivalent. Donnée seulement au l'Université de Saint-Boniface.

**COMP 1021** Introduction à l'informatique II Cr.Hrs.3 (Labo requis) (L'ancien 074.102) Introduction à la programmation orientée objet, aux structures de données informatiques et à l'algorithme. On ne peut se faire créditer à la fois le COMP 1020 (074.102). Préalable: COMP 1010 ou COMP 1011; ou Informatique 40S (avec une note minimale de 75%) et n'importe quel cours de mathématiques de la 12<sup>ième</sup> année ou du niveau 40S, ou l'équivalent. Donnée seulement au l'Université de Saint-Boniface.

**COMP 1261** Introduction aux services informatiques modernes I Cr.Hrs.3 (Ancien 074.126) Entre autres, l'accent est mis sur le traitement de texte, les chiffriers, les systèmes pour la



gestion de données et le traitement graphique. Ce cours ne demande aucune connaissance préalable en informatique. On inscrit(e) à un programme de majeure ou de spécialisation en Informatique ne peut s'inscrire à ce cours. On ne peut se faire créditer à la fois le COMP 1260. Donné seulement au l'Université de Saint-Boniface.

**COMP 1271** Introduction aux services informatiques modernes II Cr.Hrs.3

(Ancien 074.127) Utilisation de nouveaux outils pour la création de pages WEB, apprendre les techniques de présentations efficaces, se familiariser avec d'autres systèmes d'exploitation, utiliser les outils de transfert de fichiers, programmer des scripts de base lors de la conception de pages WEB, comprendre les question actuelles liées à la technologie dans la société. On ne peut se faire créditer à la fois le COMP 1270 (074.127). Préalable: COMP 1260 ou COMP 1261 (ou connaissances équivalents) fortement recommandé. Donné seulement au l'Université de Saint-Boniface.

**COMP 2061** Structures discrètes et programmation Cr.Hrs.6

(Labo requis) (Ancien 074.206F) Introduction aux éléments de la représentation, de l'organisation et de la manipulation des données dans les systèmes informatisés. Méthodes permettant de concevoir et d'utiliser des logiciels d'envergure. On ne peut se faire créditer à la fois le 074.206 et le COMP 2140 (074.214). Préalables: COMP 1021 or COMP 1020 (074.102) (ou l'ancien 074.123), un de MATH 1301 ou MATH 1300 (ou 136.130) (C) ou MATH 1310 (ou 136.131) (ou les anciens 010.114 ou 013.146), et un de MATH 1501 ou MATH 1500 (ou 136.150), MATH 1510 (ou 136.151), l'ancien 136.153, ou MATH 1690 (ou 136.169) (C). Donné seulement au l'Université de Saint-Boniface.

**COMP 2191** Introduction au calcul scientifique Cr.Hrs.3

(Ancien 074.219) Un cours en informatique appliquée introduisant des concepts tels que l'approximation par polynômes, la résolution d'équations non linéaires, les systèmes linéaires, la simulation et la géométrie analytique. On ne peut se faire créditer à la fois le COMP 2190. Préalables: COMP 1020 ou COMP 1021 (ou 074.102) (C), et un de MATH 1500 ou MATH 1501 (ou 136.150) (C), MATH 1510 (ou 136.151) (C), MATH 1520 (ou 136.152) (C), l'ancien 136.153 (C) ou MATH 1690 (ou 136.169) (C). Préalable ou concomitant: Un de MATH 1300, MATH 1301, ou MATH 1310. Donné seulement au l'Université de Saint-Boniface.

## Faculté des sciences-Mathematics

**MATH 0401** Habiletés mathématiques Cr.Hrs.0

Ce cours a été conçu principalement, mais non exclusive, en fonction des besoins d'étudiants se préparant à suivre des cours d'informatique, de mathématiques, de statistiques ou de physique de niveau universitaire, sans avoir réussi le préalable normal, le Mathématiques 40S. L'étudiant va y apprendre à appliquer des outils mathématiques à des situations élémentaires, puis computationnellement plus compliquées. Les leçons magistrales comporteront une révision de concepts fondamentaux, des exemples, des résolutions de problèmes pratiques, des applications et de la rétroaction. Ce cours ne comporte aucun crédit universitaire; il n'est pas conçu pour remplacer le Mathématiques 40S

comme condition d'admission à certains cours de niveau 1000; un résultat de C (60%) est requis au MATH 0401. Préalable : autorisation par le chef du secteur des sciences mathématiques au Collège. Selon le niveau de réussite au test de dépistage en mathématiques administré au Collège, l'étudiant peut être contraint de suivre ce cours avant d'être autorisé à s'inscrire à des cours ayant le préalable Mathématiques 40S.

**MATH 1191** Sujets choisis en mathématiques Cr.Hrs.6 (Ancien 136.119) Ce cours offre aux étudiants de diverses facultés un aperçu des mathématiques modernes. Les sujets étudiés sont tirés des systèmes de nombres, de la géométrie et de la combinatoire. Ce cours est terminal et ne peut être reconnu comme préalable à aucun autre cours universitaire en mathématiques. Ce cours ne peut pas être reconnu aux fins d'un programme spécialisé ou général, majeure ou mineure en sciences mathématiques. L'inscription est interdite à tout étudiant ayant obtenu une note de C ou mieux dans un quelconque cours de mathématiques, à l'exception des cours MATH 1010 (136.101) ou MATH 1020 (FA 1020, 136.102, 054.102). Ce cours ne peut pas être suivi en même temps qu'un autre cours de mathématiques, à l'exception des cours MATH 1010 ou MATH 1020 (FA 1020). Aucun préalable. Donné seulement au l'Université de Saint-Boniface.

**MATH 1201** Éléments de mathématiques discrètes Cr.Hrs.3 (Labo requis) (Ancien 136.120) Suites et séries, trigonométrie, nombres complexes, algèbre de polynômes, approximation des zéros de fonctions, équations aux différences. On ne peut se faire créditer le MATH 1201 et le MATH 1200 ou MATH 1210. L'inscription est interdite à tout étudiant ayant obtenu des crédits de niveau 2000 ou plus en mathématiques, à moins que le cours MATH 1201 soit obligatoire dans le programme de l'étudiant. Préalable : Mathématiques 40S (précalcul) ou l'ancien Mathématiques 40S (300) avec une note minimale de 60 %, ou une note minimale de C dans le l'ancien 136.100 ou le cours Mathematical Skills offert par Extended Education de l'Université du Manitoba, ou le cours Habiletés mathématiques offert au l'Université de Saint-Boniface. Donné seulement au l'Université de Saint-Boniface.

**MATH 1301** Géométrie vectorielle et algèbre linéaire Cr.Hrs.3

(Labo requis) (Ancien 136.130) Introduction aux vecteurs, aux matrices, aux systèmes d'équations linéaires et à la géométrie à trois dimensions. On ne peut se faire créditer le MATH 1301 et les MATH 1310 (ancien 136.131), MATH 1680 (ancien 136.168), MATH 1210. Préalable : Mathématiques 40S (précalcul) ou l'ancien Mathématiques 40S (300) avec une note minimale de 60 %, ou une note minimale de C dans le l'ancien 136.100 ou le cours Mathematical Skills offert par Extended Education de l'Université du Manitoba, ou le cours Habiletés mathématiques offert au l'Université de Saint-Boniface. Donné seulement au l'Université de Saint-Boniface.

**MATH 1501** Introduction au calcul Cr.Hrs.3

(labo requis) (Ancien 136.150) Différentiation et intégration des fonctions élémentaires avec application à la théorie des extrêmes, aux taux de changements ainsi qu'aux aires et aux volumes. On ne peut se faire créditer le MATH 1501 (ancien 136.150) et les MATH 1510 (ancien 136.151), MATH 1520 (ancien 136.152), l'ancien 136.153, MATH 1680 (ancien 136.168), MATH 1690 (ancien 136.169). Préalable :



Mathématiques 40S (précalcul) ou l'ancien Mathématiques 40S (300) avec une note minimale de 60 %, ou une note minimale de C dans l'ancien 136.100 ou le cours Mathematical Skills offert par Extended Education de l'Université du Manitoba, ou le cours Habiletés mathématiques offert au l'Université de Saint-Boniface. Donné seulement au l'Université de Saint-Boniface.

**MATH 1701** Calcul II Cr.Hrs.3

(Labo Requis) (Ancien 136.170) Théories et techniques d'intégration, tracés de courbes, calculs de volume, de longueur d'arc, d'aires et des dérivées partielles. On ne peut se faire créditer le MATH 1701 (ancien 136.170) et les MATH 1690 (ancien 136.169), MATH 1700, MATH 1710 (ancien 136.171), ancien 136.173. Préalable : MATH 1501 (ancien 136.150), MATH 1510 (ancien 136.151), MATH 1520 (ancien 136.152), l'ancien 136.153 ou l'ancien MATH 1680 (ancien 136.168). Donné seulement au l'Université de Saint-Boniface.

**MATH 2301** Algèbre linéaire II Cr.Hrs.3

(Ancien 136.230) Suite du MATH 1301 (ancien 136.131 ou 013.146). Espaces vectoriels à dimensions finies, transformations linéaires et matrices; vecteurs réels et valeurs réelles. La diagonalisation et ses applications. Espaces avec produits scalaires. On ne peut se faire créditer le MATH 2301 et les MATH 2300, MATH 2352, ancien MATH 2350 (136.235), MATH 3130. Préalables : MATH 1301 ou MATH 1300 (ancien 136.130), MATH 1310 (ancien 136.131), et un de MATH 1501 ou MATH 1500 (ancien 136.150), MATH 1510 (ancien 136.151), MATH 1520 (ancien 136.152), l'ancien 136.153 ou MATH 1690 (ancien 136.169). Donné seulement au l'Université de Saint-Boniface.

**MATH 2451** Mathématiques combinatoires Cr.Hrs.6

(Ancien 136.245) Une introduction à certains sujets d'intérêt courant en mathématiques combinatoires, c'est-à-dire les techniques d'énumération, les graphes, les dessins de blocs et les généralisations, les récursions linéaires. On ne peut se faire créditer le MATH 2451 (ou MATH 2450) à la fois avec l'ancien 136.245. Préalable: une moyenne de "C" ou plus dans un cours d'introduction en sciences mathématiques à l'exception l'ancien 136.100, MATH 1010 (ou 136.101), MATH 1020 (ou 136.102), FA 1020 (ou 054.102) et MATH 1190 ou MATH 1191 (ou 136.119) (ou un cours de Mathématiques de l'ancien niveau 1000), ou consentement du département. Donné seulement au l'Université de Saint-Boniface.

**MATH 2501** Introduction à la théorie des nombres Cr.Hrs.3

(Ancien 136.250) Étude de la divisibilité, de la factorisation unique, des congruences linéaire et quadratique et du théorème de Fermat. On ne peut se faire créditer le MATH 2501 et le MATH 2500. Préalable : une note minimale de C dans un cours d'introduction en sciences mathématiques à l'exception de l'ancien 136.100, MATH 1010 (ancien 136.101), MATH 1020 (ancien 136.102) FA 1020 (ancien 054.102) et MATH 1191 ou MATH 1190 (ancien 136.119) ou l'autorisation écrite du département de mathématiques. Donné seulement au l'Université de Saint-Boniface.

**MATH 2551** Géométrie moderne Cr.Hrs.6

(Ancien 136.255) Approche moderne à la géométrie à l'aide de transformations géométriques. Sujets variés, tels isométries, symétries, similarités, inversion circulaire et groupes. On ne peut se faire créditer le MATH 2551 et

l'ancien MATH 2550. Préalables : MATH 1690 (ancien 136.169) ou un de MATH 1501, MATH 1500 (ancien 136.150), MATH 1510 (ancien 136.151), MATH 1520 (ancien 136.152), ancien 136.153; aussi, un de MATH 1301 (ancien 136.130), MATH 1310 (ancien 136.131), MATH 1701 ou MATH 1700 (ancien 136.170), MATH 1710 (ancien 136.171), ancien 136.173. Donné seulement au l'Université de Saint-Boniface.

**MATH 2601** Mathématiques numériques I Cr.Hrs.3

(Ancien 136.260) Techniques élémentaires de solution numérique de problèmes mathématiques : solution d'équation; différences finies; interpolation, systèmes d'équations; différentiation numérique; intégration numérique. On ne peut se faire créditer le MATH 2601 et le MATH 2600, MATH 2120. Préalables : MATH 1301 ou MATH 1300 (ancien 136.130) ou MATH 1310 (ancien 136.131), MATH 1690 (ancien 136.169), MATH 1701 ou MATH 1700 (ancien 136.170), MATH 1710 (ancien 136.171) ou ancien 136.173, et COMP 1011 ou COMP 1010 (ancien 074.101) ou son équivalent, ou l'autorisation écrite du professeur. Donné seulement au l'Université de Saint-Boniface.

**MATH 2701** Calcul III A Cr.Hrs.3

(Ancien 136.270) Calcul des variables multiples. On ne peut se faire créditer le MATH 2701 et le MATH 2751 (ancien 136.275) ou les anciens 006.277, 006.228, 006.243, 013.239 ou 013.234. Préalables : le MATH 1301 (ancien 136.130) ou MATH 1311 (ancien 136.131) (ou l'ancien 013.146) et un des MATH 1691 (ancien 136.169), MATH 1701 (ancien 136.170), MATH 1711 (ancien 136.171) ou MATH 1731 (ancien 136.173) (ou les anciens 013.149, 013.159 ou 006.126).

**MATH 2711** Calcul III B Cr.Hrs.3

(Ancien 136.271) Analyse, suites et séries. On ne peut se faire créditer le MATH 2711 et le MATH 2751 (ancien 136.275), ou les anciens 006.237, 006.238, 006.244, 013.249 ou 013.234. Préalable : un de MATH 1690 (ancien 136.169), MATH 1701 (ancien 136.170), MATH 1711 (ancien 136.171) ou MATH 1731 (ancien 136.173) (ou les anciens 013.149, 013.159, ou 006.126) et un de MATH 1201 (ancien 136.120) ou MATH 2201 (ancien 136.220). Concomitant : MATH 1301 (ancien 136.130) ou le MATH 1311 (ancien 136.131) (ou l'ancien 013.146).

**MATH 2721** Calcul à plusieurs variables Cr.Hrs.3

(Ancien 136.270) Calcul différentiel et intégral à plusieurs variables. On ne peut se faire créditer le MATH 2721 et le MATH 2720 ou le MATH 2751 (ancien 136.275) ou le 136.270 ou le MATH 2110 (ancien 136.211) ou le MATH 2130. Préalables : le MATH 1301, MATH 1300 (ancien 136.130) ou MATH 1311 (ancien 136.131) (ou l'ancien 013.146) et un de MATH 1691 (ancien 136.169), MATH 1701, MATH 1700 (ancien 136.170), MATH 1711 (ancien 136.171) ou l'ancien 136.173. Donné seulement au l'Université de Saint-Boniface.

**MATH 2731** Suites et séries Cr.Hrs.3

(Ancien 136.271) Analyse, suites et séries. On ne peut se faire créditer le MATH 2731 et le MATH 2730 ou le MATH 2750 (ancien 136.275), ou le 136.271 ou le MATH 2132 ou le MATH 2100 (ancien 136.210). Préalables : un de MATH 1690 (ancien 136.169), MATH 1701, MATH 1700 (ancien 136.170), MATH 1711 (ancien 136.171) ou l'ancien 136.173. Concomitant : le MATH 1301, MATH 1300 (ancien 136.130)



ou le MATH 1311 (ancien 136.131). Donné seulement au l'Université de Saint-Boniface.

**MATH 2801** Équations différentielles ordinaires et leurs applications I Cr.Hrs.3  
(Ancien 136.280) Introduction à la théorie des équations différentielles ordinaires. Techniques pratiques de solution, principalement en ce qui a trait aux équations du premier ordre et aux équations linéaires d'ordre plus élevé. Systèmes linéaires. Applications à des problèmes en sciences ou à d'autres domaines. On ne peut se faire créditer le MATH 2801 et le MATH 2800 ou le MATH 2132 ou le MATH 2100 (ancien 136.210). Préalable : MATH 1301 ou MATH 1300 (ancien 136.130) ou MATH 1310 (ancien 136.131). Concomitant : MATH 2721, MATH 2720 ou MATH 2750. Donné seulement au l'Université de Saint-Boniface.

**MATH 3601** Mathématiques numériques II Cr.Hrs.3  
(Ancien 136.360) Différentiation numérique; quadrature Gaussienne; lissage à l'aide de splines; méthodes numériques pour les problèmes à valeurs initiales et problèmes aux frontières; transformations; problèmes où interviennent les systèmes de grande taille, pars ou mal conditionnés. On ne peut se faire créditer à la fois avec le MATH 3600 (ou 136.360). Préalables: MATH 2600 ou MATH 2601 (ou 136.260) (C); MATH 2800 ou MATH 2801 (ou 136.280) (C); MATH 2720 ou MATH 2721 (ou 136.272) (C) et MATH 2730 ou MATH 2731 (ou 136.271) (C), ou MATH 2750 (ou 136.275) (C); et le COMP 1010 ou COMP 1011 (ou 074.101) (C); ou le consentement du professeur. Donné seulement au l'Université de Saint-Boniface.

**MATH 3821** Introduction à la modélisation mathématique 1 Cr.Hrs.3  
(L'ancien 136.382) Une introduction aux principes et aux techniques entourant le design, le développement, la résolution, l'expérimentation et la révision de modèles mathématiques de phénomènes du "vrai monde" à l'aide d'études de cas. Préalables: MATH 2600 ou MATH 2601, puis MATH 2800 ou MATH 2801 (ou l'ancien 136.280)(C). Préalable ou concomitant: STAT 1000 ou STAT 1001. Donné seulement au l'Université de Saint-Boniface. L'étudiante(e) ne peut se faire créditer à la fois le MATH 3821 et le MATH 3820.

**MATH 3911** Sujets choisis en mathématiques I Cr.Hrs.3  
(Ancien 136.391) Sujets d'intérêt courant en mathématiques appliquées, selon les besoins et intérêts des étudiants et des étudiantes et du professeur ou de la professeure incluant notamment des sujets spécialisés non abordés dans les autres cours offerts par le secteur. Préalables : autorisation écrite du professeur ou de la professeure. Donné seulement au l'Université de Saint-Boniface.

**MATH 4921** Sujets choisis en mathématiques Cr.Hrs.3  
(L'ancien 136.492) Sujets d'intérêt courant en mathématiques ou en mathématiques appliquées, selon les besoins et intérêt des étudiants et professeurs, incluant notamment des sujets spécialisés non disponibles dans les autres cours offerts par le secteur. Préalable: autorisation par le chef du secteur des sciences mathématiques. Donné seulement au l'Université de Saint-Boniface. L'étudiant(e) ne peut se faire créditer à la fois le MATH 4921 et le MATH 4920.

## Faculté des sciences-Microbiology

### **MBIO 1011** Microbiologie I Cr.Hrs.3

(Labo requis) Le cours traitera de la définition et de l'historique de la microbiologie, des concepts pratiques de la microbiologie, de la structure des cellules procaryotes, de l'expression des gènes spécifiques aux procaryotes, du transfert de l'information génétique, du rôle des microbes dans l'environnement incluant le corps humain, ainsi que des applications de la microbiologie dans la production des aliments et dans la biotechnologie. On ne peut se faire créditer MBIO 1011 et MBIO 1010 et MBIO 2101, MBIO 2100 (060.210), MBIO 2111, ou MBIO 2110 (060.211). Préalable ou concomitant : BIOL 1021. Donné seulement au l'Université de Saint-Boniface.

### **MBIO 2021** Microbiologie II Cr.Hrs.3

(Labo requis) Le cours traitera de la croissance bactérienne, de la réplication de l'ADN, des processus de la transcription et de la traduction ainsi que leurs rôles dans la régulation de l'expression génétique. Les familles des bactéries et de virus animaux, leurs modes de reproduction, leurs pouvoirs pathogènes seront discutés. L'introduction aux mutations et au transfert de gènes bactériens sera également discutée. On ne peut se faire créditer MBIO 2021 et MBIO 2020 et MBIO 2111 ou MBIO 2110 (060.211). Préalables : MBIO 1011 ou MBIO 1010 et un des suivants : CHEM 1311, CHEM 1310 ou CHEM 1320 (002.132). Donné seulement au l'Université de Saint-Boniface.

### **MBIO 2361** Biochimie I : Les molécules biochimiques et une introduction à l'énergie métabolique Cr.Hrs.3

(Labo requis) (Ancien 060.236) Introduction aux différents types moléculaires rencontrés en biochimie ainsi qu'au concept d'énergie métabolique comme produit du catabolisme nécessaire à la biosynthèse. Aussi offert par le département de chimie sous la cote CHEM 2361. On ne peut se faire créditer MBIO 2361 et MBIO 2360 (060.236) et MBIO 2770 (060.277), CHEM 2361, CHEM 2360 (002.236), CHEM 2860 (002.286) ou CHEM 2770 (002.277). Préalables : une note minimale de C dans CHEM 1311 ou CHEM 1310 (002.131) et une note minimale de C dans BIOL 1031 ou BIOL 1030 (071.125). NOTE : MBIO 2361 ne peut être reconnu aux fins des 12 crédits requis par le département de chimie pour les étudiantes et les étudiants inscrits à Université 1 avant 2007-2008. Pour les personnes qui suivent les nouveaux règlements du baccalauréat général (2008-2009), MBIO 2361 peut faire partie des 18 crédits de chimie ou de microbiologie de niveau avancé. Donné seulement au l'Université de Saint-Boniface.

### **MBIO 2371** Biochimie II : Catabolisme, synthèse et les voies d'information Cr.Hrs.3

(Labo requis) (Ancien 060.237) Introduction aux processus métaboliques cellulaires de base incluant la production et l'utilisation de l'énergie métabolique, la dégradation et la synthèse des molécules biochimiques, la synthèse de l'ADN, de l'ARN et des protéines et la régulation de ces processus. Aussi offert par le département de chimie sous la cote CHEM 2371. On ne peut se faire créditer MBIO 2371 et MBIO 2370 (060.237) et MBIO 2780 (060.278), CHEM 2371, CHEM 2370 (002.237), ou CHEM 2780 (002.278). Préalables : une note minimale de C dans un de MBIO 2361, MBIO 2360 (060.236), CHEM 2361 ou CHEM 2360 (002.236) et dans CHEM 2211 ou CHEM 2210 (002.221) . NOTE : MBIO 2371 ne peut être reconnu aux fins des 12



crédits requis par le département de chimie pour les étudiantes et étudiants inscrits à Université 1 avant 2007-2008. Pour les personnes qui suivent les nouveaux règlements du baccalauréat général (2008-2009), MBIO 2371 peut faire partie des 18 crédits de chimie ou de microbiologie de niveau avancé. Donnés seulement à l'Université de Saint-Boniface.

**MBIO 3011 Mécanismes des maladies microbiennes Cr.Hrs.3**

(Ancien 060.301) Étude des relations hôtes-parasites. Introduction à la réponse immunitaire, à la pathogénie microbienne, aux maladies virales, à la microbiologie clinique, à la santé publique et aux agents antimicrobiens. On ne peut se faire créditer MBIO 3011 et MBIO 3010. Préalables : une note minimale de C dans MBIO 2021 ou MBIO 2020 (MBIO 2100, MBIO 2101, 060.210) et une note minimale de C dans un de MBIO 2371, MBIO 2370 (060.237), CHEM 2371 ou CHEM 2370 (002.237). Donnés seulement à l'Université de Saint-Boniface.

**MBIO 3031 Microbiologie III Cr.Hrs.3**

(Labo requis) Ce cours présentera une introduction à la croissance microbienne et aux approches génomiques utilisées pour l'analyse du métabolisme microbien. En utilisant ses outils, la physiologie de la paroi cellulaire microbienne, le transport, la mobilité ainsi que le métabolisme microbien en relation avec la production d'ATP, la respiration, la fermentation et la fixation du carbone seront discutés. On ne peut se faire créditer MBIO 3031 et MBIO 3030 et MBIO 2101 ou MBIO 2100 (060.210). Préalables : une note minimale de C dans MBIO 2021 ou MBIO 2020 ou l'autorisation du professeur et une note minimale de C dans un de MBIO 2371, MBIO 2370 (060.237), CHEM 2371 ou CHEM 2370 (002.237).

**MBIO 3411 Biologie moléculaire Cr.Hrs.3**

(Ancien 060.341) Traitement rigoureux des bases de la biologie moléculaire moderne reliées à la maladie moléculaire, aux manipulations génétiques et cellulaires, ainsi qu'aux contrôles cellulaires. On ne peut se faire créditer MBIO 3411 et MBIO 3410. Préalables : une note minimale de C dans un de MBIO 2371, MBIO 2370 (060.237), CHEM 2371, CHEM 2370 (002.237), MBIO 2780 (060.278) ou CHEM 2780 (002.278) et un des cours suivants (avec une note minimale de C) : MBIO 2021, MBIO 2020, (MBIO 2111, MBIO 2110, 060.211), BIOL 2521 ou BIOL 2520 (ZOOL 2281, ZOOL 2280, 022.228), ou BIOL 2501 ou BIOL 2500 (BOTN 2461, BOTN 2460, 001.246). Donnés seulement à l'Université de Saint-Boniface.

**MBIO 3451 Régulation des processus biochimiques Cr.Hrs.3**

(Ancien 060.345) Mécanismes de régulation de l'activité enzymatique, incluant l'allostérie, le contrôle de certaines routes biosynthétiques ou dégradatives sélectionnées, ainsi que la régulation de l'expression génétique. On ne peut se faire créditer MBIO 3451 et MBIO 3450. Préalables : une note minimale de C dans MBIO 2021 ou MBIO 2020 (MBIO 2111, MBIO 2110, 060.211) ou l'autorisation écrite de la professeure ou du professeur, et une note minimale de C dans un de MBIO 2371, MBIO 2370 (060.237), CHEM 2371 ou CHEM 2370 (002.237). Donnés seulement à l'Université de Saint-Boniface.

**MBIO 3461 Biochimie membranaire et cellulaire Cr.Hrs.3**  
(Labo requis) (Ancien 060.346) Isolement, fractionnement,

structure et fonction des membranes cellulaires et des composés subcellulaires. Mise en évidence du rôle central joué par ces éléments dans la biochimie des processus cellulaires. On ne peut se faire créditer MBIO 3461 et MBIO 3460. Préalables : une note minimale de C dans un de MBIO 2371, MBIO 2370 (060.237), CHEM 2371 ou CHEM 2370 (002.237). Donnés seulement à l'Université de Saint-Boniface.

**MBIO 4011 Immunologie Cr.Hrs.3**

(Labo requis) (Ancien 060.401) Étude des antigènes, des anticorps, des réactions antigènes-anticorps, de l'immunogénétique, de la régulation de la réponse du système immunitaire, du complément, des réactions d'hypersensibilité, de l'auto-immunité, des déficiences immunitaires, de l'immunologie des greffes et des tumeurs. On ne peut se faire créditer MBIO 4011 et MBIO 4010 (060.401) et MBIO 4020 (060.402) ou l'ancien 060.444. Préalable : une note minimale de C dans MBIO 3011 ou MBIO 3010 (060.301). Donnés seulement à l'Université de Saint-Boniface.

**MBIO 4411 Virologie Cr.Hrs.3**

Analyse détaillée des propriétés fondamentales des virus, de la taxonomie virale ainsi que des façons dont les virus se reproduisent. Examen des méthodes expérimentales utilisées en virologie et des façons dont les virus provoquent des maladies. On ne peut se faire créditer MBIO 4411 et MBIO 4010 et MMIC 7010 (097.701). Préalables : une note minimale de C dans MBIO 3011 ou MBIO 3010 (060.301) et dans MBIO 3411 ou MBIO 3410 (060.341). Donnés seulement à l'Université de Saint-Boniface.

**MBIO 4541 Transduction de l'énergie biologique Cr.Hrs.3**

(Ancien 060.454) Biochimie des processus biologiques comportant l'interconversion des différentes formes d'énergie comme la phosphorylation oxydative, le transport dans les membranes et les processus de contractions. On ne peut se faire créditer MBIO 4541 et MBIO 4540. Préalables : une note minimale de C dans MBIO 2021 ou MBIO 2020 (MBIO 2111, MBIO 2110, 060.211) et une note minimale de C dans un de MBIO 2371, MBIO 2370 (060.237), CHEM 2371 ou CHEM 2370 (002.237), ou l'autorisation écrite de la professeure ou du professeur. MBIO 3031 (MBIO 3030) est recommandé. Donnés seulement à l'Université de Saint-Boniface.

**MBIO 4581 Technologie de l'ADN recombinant Cr.Hrs.3**

(Ancien 060.458) Techniques d'isolement de plasmides, la digestion de l'ADN par les enzymes (endonucléases) de restriction, le clonage, la détermination de la séquence des nucléotides dans l'ADN, la transformation de l'ADN, le transfert de gènes. On ne peut se faire créditer MBIO 4581 et MBIO 4570 (060.457). Préalable : une note minimale de C dans MBIO 3411 ou MBIO 3410 (060.341). Donnés seulement à l'Université de Saint-Boniface.

**MBIO 4601 Génétique moléculaire des procaryotes Cr.Hrs.3**

(Labo requis) (Ancien 060.460) Étude détaillée de la réplication, de l'expression, de la mutagenèse de la réparation de l'ADN ainsi que des éléments génétiques transposables des bactéries et des virus. On ne peut se faire créditer MBIO 4601 et MBIO 4600 et les anciens 060.452 ou 060.456. Préalables : une note minimale de C dans MBIO 2021 ou MBIO 2020 (MBIO 2111, MBIO 2110, 060.211) et une note minimale de C dans un de MBIO 2371, MBIO 2370



(060.237), CHEM 2371 ou CHEM 2370 (002.237). BIOL 2501 ou BIOL 2500 (BOTN 2461, BOTN 2460, 001.246) est recommandé. Donné seulement au l'Université de Saint-Boniface.

## Faculté des sciences-Physics

### PHYS 1021 Physique générale I Cr.Hrs.3

(Labo requis) (Ancien 016.102) Ce cours d'initiation à la physique ne requiert pas de calcul et traite de certains thèmes tirés de la mécanique et de la thermodynamique avec des exemples tirés des sciences biologiques et physiques. Ce cours, de même que le PHYS 1030 (ou 016.103), est particulièrement conseillé aux étudiants désireux d'avoir une vue d'ensemble de la physique ou qui ont l'intention d'entreprendre des études dans les sciences de la santé. Il peut aussi servir comme cours de base pour un programme de spécialisation en physique ("B+" ou mieux) ou de majeure en physique ("B" ou mieux). On ne peut se faire créditer à la fois le PHYS 1020 (ou 016.102) avec le PHYS 1050 ou PHYS 1051 (ou 016.105), le PHYS 1410 (ou 016.141), ou le PHYS 1420 (ou 016.142). Préalables: Soit Physique 40S, PHYS 0900 (ou 016.090) (avec Pass) ou l'équivalent, et soit le cours de Mathématiques précalcul 40S, ou une note de 70% dans les cours de Mathématiques appliquées 40S, ou l'équivalent. Il est fortement recommandé aux étudiants d'obtenir une note de 70% dans les cours de Mathématiques précalcul 40S et de Physique 40S. Donné seulement au l'Université de Saint-Boniface.

### PHYS 1031 Physique générale II Cr.Hrs.3

(Labo requis) (Ancien 016.103) Ce cours d'initiation à la physique ne requiert pas de calcul et traite de certains thèmes tirés de l'électricité, du magnétisme, de l'optique et de la physique moderne et appuyé d'exemples pris des sciences biologiques et physiques. Ce cours, de même que le PHYS 1020 (ou 016.102), est particulièrement conseillé aux étudiants désireux d'avoir une vue d'ensemble de la physique ou qui ont l'intention d'entreprendre des études des sciences de la santé. Il ne peut servir aux programmes de majeure ou de spécialisation en physique. On ne peut se faire créditer à la fois le PHYS 1030 (ou 016.103) et le PHYS 1410 (ou 016.141) ou le PHYS 1420 (ou 016.142) ou les anciens 016.120. Préalable: PHYS 1020 ou PHYS 1021 (ou 016.102) (C) ou PHYS 1050 ou PHYS 1051 (ou 016.105) (C). Donné seulement au l'Université de Saint-Boniface.

### PHYS 1051 Physique I : La mécanique Cr.Hrs.3

(Labo requis) (Ancien 016.105) Une introduction, basée sur le calcul, à la mécanique classique. Les sujets suivants seront traités: les vecteurs, la dynamique et la cinématique du mouvement de translation. La cinématique de la rotation, l'énergie, le travail, le moment linéaire, les collisions, le mouvement oscillatoire. Ce cours est destiné particulièrement aux étudiants qui voudraient poursuivre leur programme d'études dans les sciences physiques ou en ingénierie. On ne peut se faire créditer à la fois le PHYS 1050 (ou 016.105) et le PHYS 1020 ou PHYS 1021 (ou 016.102) ou PHYS 1410 (ou 016.141) ou le PHYS 1420 (ou 016.142) (et les anciens 016.118, 016.120 ou 016.127). Préalables: Mathématiques pré-calcul 40S (ou l'équivalent) et Physique 40S (ou l'équivalent) ou le PHYS 0900 (ou 016.090) (avec "Pass"). Il est fortement recommandé que l'étudiant obtienne une moyenne de 80% dans les Préalables de mathématiques précalcul 40S et de Physiques

40S. Préalables ou concomitants: Un de MATH 1500 ou MATH 1501, MATH 1510, MATH 1520, l'ancien 136.153 ou MATH 1690. Donné seulement au l'Université de Saint-Boniface.

### PHYS 1071 Physique II : La physique des ondes et la physique moderne Cr.Hrs.3

(Labo requis) (Ancien 016.107) Une introduction, basée sur le calcul, à la physique des ondes et à la physique moderne. Les sujets suivants seront traités: les oscillations: les ondes, la superposition, l'interférence, la relativité, l'effet photoélectrique, le modèle quantique, l'atome de Rutherford, le modèle de Bohr, les spectres atomiques, la théorie de deBroglie, le principe d'incertitude de Heisenberg, les réactions nucléaires, la fission, la fusion, les particules sous-atomiques. Ce cours, tout comme le PHYS 1050 (ou 016.105) Physique, est destiné aux étudiantes et aux étudiants qui veulent suivre un programme d'études en sciences physiques. On ne peut se faire créditer à la fois le PHYS 1070 (ou 016.107) avec le PHYS 1410 (ou 016.141), ou le PHYS 1420 (ou 016.142). Préalables: PHYS 1050 ou PHYS 1051 (ou 016.105) (ou l'ancien 016.118) (C) ou PHYS 1020 ou PHYS 1021 (ou 016.102) (B), et MATH 1500 ou MATH 1501 (ou 136.150) ou MATH 1510 (ou 136.151), MATH 136.152 (ou 136.152), ou l'ancien 136.153 (C). Préalables ou concomitants: MATH 1700 ou MATH 1701 ou MATH 1690 ou MATH 1710. Donné seulement au l'Université de Saint-Boniface.

### PHYS 1301 Énergie et environnement Cr.Hrs.6

(Ancien 016.130) Ce cours présente les particularités physiques générales de notre environnement. On insistera sur certains problèmes d'actualité, à savoir l'atmosphère, le cosmos, la structure de la matière et de l'énergie, les sources d'énergie, l'application des principes de la physique à la technologie moderne, etc. Le cours comportera des projections de films et des démonstrations. La participation aux discussions et aux choix de sujets à traiter est encouragée. Ce cours est conçu pour les étudiants de toutes les facultés et n'exige aucune connaissance des mathématiques ou de la physique. Il ne peut faire partie des programmes de Mineure ou de Majeure en Physique. On ne peut se faire créditer à la fois le PHYS 1300. Donné seulement au l'Université de Saint-Boniface.

### PHYS 2201 Électricité et magnétisme Cr.Hrs.6

(Labo requis) (Ancien 016.220) Champs électrostatique, potentiel électrostatique, loi de Gauss, capacitance, matériaux diélectriques, champs magnétiques, loi d'Ampère, induction magnétique, matériaux magnétiques, courant de déplacement, forme intégrale des équations de Maxwell, loi d'Ohm, lois de Kirchoff, analyse de circuits en courant continu, circuits équivalents, analyse de circuits en courant alternatif, impédance complexe, circuits RLC, couplage magnétique, transformateurs, diodes et circuits avec diodes. On ne peut se faire créditer à la fois le PHYS 2200 (ou 016.220) et le PHYS 2600 (ou 016.260) ou le PHYS 2610 (ou 016.261). Préalables: Un de PHYS 1070 ou PHYS 1071 (ou 016.107) (ou les anciens 016.106 ou 016.120) (C), ou PHYS 1020 ou PHYS 1021 (ou 016.102) (C+) et PHYS 1030 ou PHYS 1031 (ou 016.103) (C+) (C); et un de MATH 1500 ou MATH 1501 (ou 136.150) (C), MATH 1510 (ou 136.151) (C), MATH 1520 (ou 136.152) (C), l'ancien 136.153 (C) ou MATH 1690 (ou 136.169) (C). Préalables ou concomitants: MATH 1200 ou MATH 1201 et un de MATH 1690, MATH 1700 ou MATH 1701, MATH 1710 ou l'ancien 136.173. Donné seulement au l'Université de Saint-



Boniface.

**PHYS 2251** Introduction à la physique moderne Cr.Hrs.3 (Ancien 016.225) Un cours d'introduction en physique atomique et nucléaire. Théorie cinétique des gaz, théorie de la relativité, effets de quantum, physique atomique, physique nucléaire. Ce cours n'est pas disponible aux étudiants qui auraient préalablement obtenu des crédits ou qui sont concurremment inscrits dans le cours PHYS 2380 (ou 016.238) (ou les anciens 016.250 ou 016.230)). Ce cours n'est pas disponible aux étudiants dans les programmes de spécialisation ou de majeure en Physique. On ne peut se faire créditer à la fois le PHYS 2250. Préalables: Un de: PHYS 1070 ou PHYS 1071 (ou 016.107) (C), ou PHYS 1020 ou PHYS 1021 (ou 016.102) (C+) et PHYS 1030 ou PHYS 1031 (ou 016.103)(C+) (ou l'ancien 016.121) (C+), (ou les anciens 016.127 (C); et un de MATH 1500 ou MATH 1501 (ou 136.150) (C), MATH 1510 (ou 136.151) (C), MATH 1520 (ou 136.152) (C), l'ancien 136.153 (C) ou MATH 1690 (ou 136.169) (C). Préalables ou concomitants: MATH 1200 ou MATH 1201 et un de MATH 1690, MATH 1700 ou MATH 1701, MATH 1710 ou l'ancien 136.173. Donné seulement au l'Université de Saint-Boniface.

**PHYS 2261** Optique Cr.Hrs.3 (Labo requis) (Ancien 016.226) Étude de la réfraction, réflexion, des systèmes de lentilles simples et des systèmes optiques, dispersion, achromatisme et vue lementerai de la diffraction, interférence et polarisation. On ne peut se faire créditer à la fois le PHYS 2260. Préalables: Un de: PHYS 1070 ou PHYS 1071 (ou 016.107) (C), ou PHYS 1020 ou PHYS 1021 (ou 016.102) (C+) et PHYS 1030 ou PHYS 1031 (ou 016.103) (C+); et un de MATH 1500 ou MATH 1501 (ou 136.150) (C), MATH 1510 (ou 136.151) (C), MATH 1520 (ou 136.152) (C), l'ancien 136.153 (C) ou MATH 1690 (ou 136.169) (C). Préalables ou concomitants: MATH 1300 ou MATH 1301 ou MATH 1310 et un de MATH 1690, MATH 1700 ou MATH 1701, MATH 1710 ou l'ancien 136.173. Donné seulement au l'Université de Saint-Boniface.

**PHYS 2271** Éléments de physique pour les sciences biologiques A Cr.Hrs.3 (Ancien 016.227) Ce cours introduit les éléments de physique ayant un rapport direct avec les sciences biologiques. En particulier, le transfert d'énergie par rayonnement, les effets de surface, la conduction thermique, les phénomènes de diffusion, les phénomènes de transport ainsi que l'utilisation de matériaux radioactifs. On ne peut se faire créditer à la fois le PHYS 2270. Préalable: PHYS 1070 ou PHYS 1071 (ou 016.107) (C) ou PHYS 1030 ou PHYS 1031 (ou 016.103) (C) ou le consentement du département. Donné seulement au l'Université de Saint-Boniface.

**PHYS 2281** Éléments de physique pour les sciences biologiques B Cr.Hrs.3 (Ancien 016.228) Ce cours traite des propriétés physiques des solides, des liquides et des gaz ainsi que des phénomènes de radiation et de la radioactivité. L'accent sera mis sur les aspects ayant un rapport direct avec les sciences biologiques. On ne peut se faire créditer à la fois le PHYS 2280. Préalable: PHYS 1070 ou PHYS 1071 (ou 016.107) (C) ou PHYS 1030 ou PHYS 1031 (ou 016.103) (C) ou le consentement du département. Donné seulement au l'Université de Saint-Boniface.

## Faculté des sciences-Statistics

**STAT 1001** Analyse statistique de base I Cr.Hrs.3 (Ancien 005.100) Une introduction aux principes fondamentaux de la statistique et aux procédures utilisées en analyse de données. Les sujets traités incluent: la cueillette des données, l'affichage et l'élagage des données, les relations entre variables, les distributions échantillonnelles, l'estimation et les tests de signification, l'inférence pour les moyennes. On ne peut se faire créditer à la fois le STAT 1000 (005.100) et le STAT 2220 (005.222). Préalable: Un cours de mathématiques 40S ou l'équivalent. Donné seulement au l'Université de Saint-Boniface.

**STAT 2001** Analyse statistique de base II Cr.Hrs.3 (Ancien 005.200) L'étude des procédures d'estimation et de tests d'hypothèses pour les moyennes et les proportions dans les contextes d'échantillonnage à une, deux ou plusieurs variables; introduction à l'analyse de variance; régression et corrélation; les sujets optionnels peuvent inclure les méthodes nonparamétriques, la conception d'expériences, les modèles probabilistes. On ne peut se faire créditer à la fois le STAT 2000. Préalable: STAT 1000 ou STAT 1001(ou 005.100) (C). Donné seulement au l'Université de Saint-Boniface.

## École de service social

**SWRK 1311** Introduction à l'analyse de la politique de bien-être social Cr.Hrs.3 Étude de la politique de bien-être social en tant que produit fini d'idéologies. Introduction à quelques éléments de l'idéologie et comparaison des systèmes idéologiques concurrents. Analyse de l'interaction des visions économiques, politiques et ethniques de la société et de leurs manifestations en tant que réponses sociétales aux besoins humains et aux services sociaux. On ne peut se faire créditer le SWRK 1310 ( ou 047.131) et (ancien 047.130).

**SWRK 2051** Théorie et organisation communautaire Cr.Hrs.3 Étude de concepts tels que le conflit et le pouvoir qui ramènent la pratique du travail social à la nature des relations humaines de second niveau. Application de ces concepts à la dynamique en vigueur au sein des communautés et des organisations et entre celles-ci. On ne peut se faire créditer le SWRK 2050 (047.205) Préalable : première moitié de SWRK 2091

**SWRK 2071** Dynamique des petits groupes Cr.Hrs.3 Explication des normes de groupe, des valeurs et des buts qui influencent la prise de décision et les modèles de communication dans les groupes. Influence du rôle des membres et des styles de leadership sur le développement et le fonctionnement du groupe. On ne peut se faire créditer le SWRK 2070 (047.207). Préalable : première moitié de SWRK 2091.

**SWRK 2081** Habiletés en communication interpersonnelle Cr.Hrs.3 Acquisition d'une gamme essentielle d'habiletés interpersonnelles pour communiquer efficacement et pour établir et maintenir des relations tant dans des situations individuelles que de groupe. Accent sur l'apprentissage



expérientiel utilisant une variété de techniques.

**SWRK 2091** Comportement humain et pratique du travail social Cr.Hrs.6

Application d'une théorie générale des systèmes à l'étude de la situation de la personne dans une famille et dans son environnement avec examen subséquent des implications pour la pratique du travail social. Critique de modèles variés du développement humain. Sessions d'information sur des dimensions du comportement qui s'avèrent critiques par rapport à la pratique du travail social.

**SWRK 2101** Perspectives sur les transitions de la vie et de l'individu Cr.Hrs.3

Examen de l'impact du cours transitoire de la vie sur le bien-être psychosocial des individus. Concentration sur les crises et les impasses problématiques qui surgissent aux moments décisifs avec leurs implications pour l'intervention en travail social. Préalable : première moitié de SWRK 2091. On ne peut se faire créditer SWRK 2101 (SWRK 2100/047.210) et l'ancien 047.206.

**SWRK 2111** Émergence de l'État-providence canadien de bien-être social Cr.Hrs.3

Examen et comparaison des systèmes de bien-être social de trois sociétés modernes. Analyse des facteurs économiques, politiques, sociaux, religieux, géographiques, démographiques et cataclysmiques influençant les modèles variés de la prestation sociale quant à leur signification par rapport au système canadien de bien-être social. On ne peut se faire créditer le SWRK 2110 (ou 047.211) et (ancien 047.130). Préalable : SWRK 1311

**SWRK 2651** Aspects sociaux du vieillissement Cr.Hrs.3

Examen des aspects sociaux du vieillissement. Accent sur la compréhension du processus de vieillissement dans toute transition de vie impliquant une adaptation à l'interaction entre l'environnement social et l'environnement physique. On ne peut se faire créditer le SWRK 2651 et le REC 2650 (or 123.265) ou IDES 2650 (or 051.265) ou HMEC 2650 ou REC 2650 (047.265).

**SWRK 3101** L'enquête systématique en travail social Cr.Hrs.3

Lien entre les méthodes systématiques de recherche scientifique et la pratique du travail social, la construction théorique pour la pratique, la collecte d'information et de données descriptives pour le processus décisionnel pour la compréhension des matériaux techniques de la recherche et introduction aux enjeux et aux défis de sdevis de recherche. On ne peut se faire créditer le SWRK 3100 (ancien 047.310)

**SWRK 3111** Perspectives sur la déviance Cr.Hrs.3

Étude des problèmes humains à l'aide de plusieurs modèles analytiques communément appliqués dans la pratique du travail social. Préalable : première moitié de SWRK 2091.

**SWRK 3131** L'État canadien contemporain du bien-être social Cr.Hrs.3

Étude du bien-être social dans la société canadienne menant à une évaluation des approches actuelles à la lumière des transformations des conditions économiques et sociales et des besoins mouvants. On ne peut se faire créditer le SWRK 3131 et l'ancien 047.301. Préalable : SWRK 1311.

**SWRK 3141** Introduction à la pratique du travail social Cr.Hrs.3

Introduction à la perspective écologique ou à d'autres approches généralistes sur lesquelles se fondent les cadres opératoires de la pratique du travail social et le rôle des travailleuses sociales et des travailleurs sociaux professionnels. Accent mis sur les valeurs et les connaissances dans le contexte d'une approche rationnelle de résolution de problème incluant ainsi la définition même du problème, la consultation, le contrat, l'intervention et l'évaluation. On ne peut se faire créditer le SWRK 3140 (ancien 047.314). Préalable ou concomitant : SWRK 1311 ou SWRK 1310 (ou 047.131), SWRK 2081 ou SWRK 2080 (ou 047.208) et SWRK 2091 ou SWRK 2090 (ou 047.209).

**SWRK 3151** Formation à la pratique du terrain 1 Cr.Hrs.12

Première expérience de formation pratique sur le terrain au cours de laquelle l'étudiant ou l'étudiante aura l'occasion d'assumer une responsabilité dans son engagement pour le travail social, la consultation, la planification, l'intervention, l'évaluation et l'application concrète de la théorie apprise en classe. Les heures requises sont calculées sur une base de 28 semaines, 2 jours par semaine, 7.5 heures par jour pour un total de 420 heures. Ces heures comprennent la participation aux activités de stage et l'évaluation de la performance. Ces heures incluent aussi les réunions et les entrevues formatives avec la personne qui supervise le stage sur une base individuelle ou en groupe de sessions. En plus, il y aura 13 sessions obligatoires d'ateliers d'application d'application d'habiletés de 3 heures chacune aux deux semaines pendant les semestres pour un total de 39 heures. Préalables: SWRK 1311 et SWRK 2081 et SWRK 2091 et SWRK 4141. Concomitant: SWRK 4201.

**SWRK 4051** Sujets spéciaux Cr.Hrs.3

Lectures dirigées ou études concentrées sur un aspect particulier du service social selon l'intérêt de l'étudiant ou de l'étudiante. Préalable : l'autorisation écrite de la professeure ou du professeur. On ne peut se faire créditer le SWRK 4051 et SWRK 4050 (ou 47.450).

**SWRK 4071** Problèmes sociaux et pratique du travail social Cr.Hrs.3

Étude en profondeur des situations à problèmes. Exploration des voies par lesquelles d'autres disciplines envisagent ou abordent le problème et le renforcement des habiletés d'intervention chez l'étudiant ou l'étudiante. Préalables : SWRK 3041 (SWRK 3040/047.304), SWRK 3121 (SWRK 3120/047.312), SWRK 4201/SWRK 3151 (SWRK 4200/SWRK 3150; 047.420.047315) ou l'autorisation écrite de la professeure ou du professeur.

**SWRK 4081** Enjeux actuels en bien-être social Cr.Hrs.3

Étude d'un champ particulier du bien-être social en vue d'améliorer les politiques et les pratiques. L'étudiante ou l'étudiant aura à choisir un séminaire parmi de nombreux autres qui sont offerts. Ceux-ci peuvent varier d'une année à l'autre.

**SWRK 4121** Formation à la pratique du terrain II Cr.Hrs.12

Seconde expérience de formation pratique sur le terrain construite à partir du cours 3151. Occasion d'apporter une contribution professionnelle soutenue dans des situations nécessitant une intégration des valeurs, connaissances et aptitudes au niveau débutant du praticien professionnel. Les heures requises sont calculées sur la base de 28 semaines, 2 jours par semaine, 7.5 heures par jour pour un total de 420



heures. Ces heures incluent aussi les réunions et les entrevues formatives avec la personne qui supervise le stage sur une base individuelle ou en groupe de sessions. En plus, il y aura 13 sessions obligatoires d'ateliers d'application, d'habiletés de 3 heures chacune aux deux semaines pendant les deux semestres pour un total de 39 heures. Préalables: SWRK 3151 et SWRK 4201. Concomitant: SWRK 4301.

**SWRK 4131** Habiletés en communication interpersonnelle avancée Cr.Hrs.3

Cours expérientiel pour la compréhension de soi et la vigilance à soi pour produire une utilisation consciente et disciplinée de soi dans la communication et les relations professionnelles. Préalables : SWRK 2081 (SWRK 2080/047.208) et l'autorisation écrite de la professeure ou du professeur.

**SWRK 4201** Champs d'intervention et de pratique du travail social Cr.Hrs.6

Séminaire d'enseignements des habiletés requises dans la pratique du travail social soit en contexte de stage ou d'intervention pratique. Insistance sur la pratique en termes de planification des changements (le système client), les politiques et les réseaux d'interrelations (le système services). Les séminaires peuvent varier d'une année à l'autre et sont organisés pour couvrir une variété de terrains ou de cadres d'interventions pratiques. Préalables : SWRK 1311 ou SWRK 1310, SWRK 2081 ou SWRK 2080, SWRK 2091 ou SWRK 2090 et SWRK 3141 ou SWRK 3140. Concomitant : SWRK 3151.

**SWRK 4211** Les perspectives féministes de la pratique du travail social et de la politique du bien-être social Cr.Hrs.6  
Analyse de la pratique du travail social et de la politique de bien-être social selon la perspective féministe. Accent mis sur l'imbrication synergique de l'intervention sociale avec les politiques dans le contexte du bien-être social et avec des concepts superposés tels que : potentialisation, pratique écologique, oppression et pratique en contexte de diversité culturelle. On ne peut se faire créditer le SWRK 4211 (ou 047.421) et SWRK 4171 (ou 047.417) ou SWRK 4211 (ou 047.421) et SWRK 4191 (ou 047.419). Préalables : SWRK 1311, SWRK 2081, SWRK 2091 et SWRK 3141.

**SWRK 4221** Peuple autochtone et pratique du travail social Cr.Hrs.6

Analyse de la pratique du travail social et de la politique de bien-être social à partir d'une perspective autochtone. Insistance sur l'imbrication entre la pratique du travail social, les politiques sociales et des concepts superposés tels que : potentialisation, pratique écologique et pratique en contexte de diversité culturelle. On ne peut se faire créditer SWRK 4220 (047.412) et SWRK 4160 (047.416) ou SWRK 4180 (047.418). Préalables : SWRK 1311 (SWRK 1310/047.131), SWRK 2081 (SWRK 2080/047.208), SWRK 2091 (SWRK 2090/047.209) et SWRK 3141 (SWRK 3140/047.314).

**SWRK 4301** Champs d'intervention et de pratique du travail social I Cr.Hrs.6

Séminaire d'enseignement des habiletés requises dans la pratique du travail social soit en contexte de stage ou d'intervention pratique. Insistance sur la pratique en termes de planification des changements (le système client), les politiques et les réseaux d'interrelations (le système services). Les séminaires peuvent varier d'une année à l'autre et sont organisés pour couvrir une variété de terrains

ou de cadres d'interventions pratiques. Préalables : SWRK 1311 (SWRK 1310/047.131), SWRK 2081 (SWRK 2080/047.208), SWRK 2091 (SWRK 2090/047.209), SWRK 3141 (SWRK 3140/047.314), 6 crédits de SWRK 4201 (SWRK 4200/047.420) et SWRK 3151 (SWRK 3150/047.315). Concomitant : SWRK 4121 (SWRK 4120/047.412)

## Faculté d'éducation-éducation(EDSB)

**EDSB 5011** L'ÉDUCATION BILINGUE ET L'ACQUISITION D'UNE LANGUE SECONDE Cr.Hrs.3

(Ancien 120.501) Étude du développement linguistique de l'enfant tout en considérant un grand nombre de facteurs socioaffectifs et cognitifs qui influencent le développement linguistique, facteurs permettant de réfléchir à toute la question de l'immersion et d'appliquer ces connaissances à la situation qui existe au Manitoba.

**EDSB 5031** Histoire de l'Éducation Française au Manitoba Cr.Hrs.3

(Ancien 120.503) Les fondements de l'éducation française au Manitoba. Examen, dans une perspective historique, des événements majeurs, de nature sociologique et politique, qui ont marqué le développement de l'éducation française au Manitoba. On ne peut se faire créditer le EDSB 5031 (ancien 120.503) et l'ancien 116.503.

**EDSB 5041** Théories d'Apprentissage en Situation d'Immersion Cr.Hrs.3

(Ancien 120.504) Étude des connaissances théoriques concernant les processus, les mécanismes et les facteurs reliés à l'apprentissage d'une langue seconde. Développement d'une compréhension plus englobante de l'expérience pratique en immersion. Préalable : le EDSB 5011 (ancien 120.501) ou le EDSB 5021 (ancien 120.502).

**EDSB 5051** L'Intégration des Matières en Situation d'Immersion Cr.Hrs.3

(Ancien 120.505) Familiarisation avec les principes de l'intégration des matières et les stratégies d'intégration de la lecture et de l'écriture dans l'enseignement des mathématiques, des sciences naturelles et des sciences humaines. Contenu du cours adapté au contexte de l'immersion.

**EDSB 5061** Théories d'Apprentissage en Milieu Minoritaire Cr.Hrs.3

(Ancien 120.506) Familiarisation avec les recherches en éducation compensatoire et bilingue et dégageant des implications en regard de l'apprentissage en milieu minoritaire.

**EDSB 5071** Difficultés dans l'Enseignement du Langage Écrit Cr.Hrs.3

(Ancien 120.507) Familiarisation avec les principes et les méthodes de prévention des difficultés d'apprentissage du langage écrit en tenant compte du contexte franco-manitobain.

**EDSB 5081** Stage et Séminaires de Recherche-Action Cr.Hrs.3

(Ancien 120.508) Utilisation du processus et des méthodes de recherche-action en vue de la résolution de problèmes éducatifs pratiques. Cours qui exige un minimum de 150 heures consacrées au stage de recherche. Pour s'inscrire à



ce cours, il faut être en fonction dans le milieu éducatif.

### Faculté d'éducation-3000 Level(EDUB)

**EDUB 3011** Pratique du Microenseignement Cr.Hrs.3  
(Ancien 063.301) Étude du comportement de l'enseignante ou de l'enseignant. Utilisation de vidéos fournissant le décor pour la pratique contrôlée de quelques-uns des éléments de l'enseignement, en particulier de l'analyse et de l'application des techniques suivantes : l'exposition, l'interrogation, la discussion et la démonstration. On ne peut se faire créditer le EDUB 3011 (ancien 063.301) et le EDUB 3161 (ancien 063.316).

**EDUB 3013** Microenseignement et pratiques pédagogiques Cr.Hrs.3  
Réflexions sur la mise en pratique d'habiletés d'enseignement par l'analyse de leçons, d'activités ou de cours.

**EDUB 3021** Sujets particuliers en sciences humaines Cr.Hrs.3  
(Ancien 063.302) Étude de sujets choisis dans le domaine de l'enseignement des sciences humaines.

**EDUB 3031** La Lecture au Secondaire Cr.Hrs.3  
(Ancien 063.303) Étude des habiletés de base en lecture et des relations de celles-ci avec les divers contenus disciplinaires du niveau secondaire. Examen de divers outils susceptibles de contribuer au développement des habiletés en lecture ainsi que diverses techniques d'évaluation.

**EDUB 3101** Méthodologie de la lecture à l'élémentaire Cr.Hrs.3  
(Ancien 063.310) Étude de l'apprentissage et de l'enseignement de la lecture à l'élémentaire dans les écoles franco-manitobaines et les écoles d'immersion. Compréhension en lecture, analyse des structures textuelles, lecture à voix haute et analyse du mot. Survol des habiletés préalables à la lecture et de quelques techniques d'évaluation de la lecture.

**EDUB 3161** Stages et Séminaires III Cr.Hrs.3  
(Ancien 063.316) Choix d'expérience initiale ou d'enrichissement dans un des domaines suivants : niveau scolaire primaire ou intermédiaire, situation en éducation spécialisée ou expérience dans un service communautaire relié de façon ponctuelle à l'éducation totale. Aspects théoriques et pratiques traités en ateliers d'initiation et en discussions de groupes. On ne peut se faire créditer le EDUB 3161 (ancien 063.316) et le EDUB 3011 (ancien 063.301).

**EDUB 3171** Stages Et Séminaires Iii Cr.Hrs.3  
(Ancien 063.317) Cours qui fournira de multiples occasions de rédiger différents genres de textes en français. Composition, transcription et révision de textes. Familiarisation avec le processus de l'écrit qui peut être adapté et appliqué aux niveaux primaire, élémentaire et secondaire.

**EDUB 3211** Enseignement Du Français Au Primaire D'immersion Cr.Hrs.3  
(Ancien 063.321) Enseignement du français langue seconde au primaire. Étude des principes de la communication orale

et écrite dans la salle de classe, de la nouvelle pédagogie dans l'enseignement de la lecture et de l'écrit et de l'intégration des savoirs et des matières. Concomitant : EDUB 2201 (ancien 063.220).

**EDUB 3251** Sujets Particuliers - Curriculum et Pédagogie Cr.Hrs.3  
(Ancien 063.325) Étude de sujets choisis en enseignement et apprentissage en immersion.

**EDUB 3261** L'acquisition Et L'apprentissage Du Français En Contexte D'immersion Cr.Hrs.3  
(Ancien 063.326) Cours théorique. Familiarisation avec les théories explicatives de l'acquisition et l'apprentissage d'une langue seconde et les approches pédagogiques qui en découlent. On ne peut se faire créditer le EDUB 3261 (ancien 063.326) et l'ancien 063.319.

**EDUB 3271** Développement Langagière en Immersion Française à l'Élémentaire Cr.Hrs.3  
(L'ancien 063.327) Étude des aspects pratiques de l'enseignement en situation d'immersion à l'élémentaire. Sensibilisation aux méthodes et aux techniques susceptibles de développer les compétences en français langue seconde. On ne peut se faire créditer l'ancien 063.327 ou l'ancien 063.320. Préalable: EDUB 3261 (063.326) ou l'ancien 063.319.

**EDUB 3281** Développement Langagière En Immersion Française Cr.Hrs.3  
(Ancien 063.328) Étude des aspects pratiques de l'enseignement en situation d'immersion au secondaire. Sensibilisation aux méthodes et aux techniques susceptibles de développer les compétences en français langue seconde. Préalable : EDUB 3261 (ancien 063.326) ou l'ancien 063.319.

**EDUB 3291** Principes et pratiques de l'évaluation des apprentissages Cr.Hrs.3  
Ce cours permettra aux étudiantes et aux étudiants de comprendre les approches et les principes permettant d'évaluer la progression des apprentissages et le degré d'acquisition des compétences des élèves.

**EDUB 3311** Perfectionnement du français Cr.Hrs.3  
Approfondissement des notions de la grammaire des particularités orthographiques du français. Étude des outils et des stratégies à l'autocorrection. Bref aperçu des anglicismes, de la cohérence textuelle et des stratégies de lecture et d'écriture.

**EDUB 3313** Perspectives autochtones en contexte scolaire Cr.Hrs.3  
Introduction aux perspectives culturelles autochtones et métisses en contexte scolaire dimensions historique, anthropologique, éthique et pédagogique. Développement de compétences professionnelles relatives à l'enseignement dans un environnement autochtone et métis.

**EDUB 3991** ÉTUDE INDIVIDUELLE Cr.Hrs.3  
(Ancien 063.399) Étude individuelle et recherche dirigées vers un sujet d'intérêt.

**EDUB 3993** ÉTUDE INDIVIDUELLE Cr.Hrs.3  
(Ancien 081.399) Étude individuelle et recherche dirigées vers un sujet d'intérêt



## Faculté d'éducation-4000 Level(EDUB)

### EDUB 4011 Stages Cr.Hrs.9

(Ancien 063.401) Période d'application, en milieu scolaire, des connaissances acquises, sous la surveillance du personnel de la Faculté et de l'école qui reçoit le ou la stagiaire.

### EDUB 4013 Stages Cr.Hrs.3

(Ancien 081.401) Période d'application, en milieu scolaire, des connaissances acquises, sous la surveillance du personnel de la Faculté et de l'école qui reçoit le ou la stagiaire.

### EDUB 4021 Didactique - Élémentaire Cr.Hrs.6

(Ancien 081.402) Étude des programmes actuels au niveau élémentaire et des méthodes pratiques d'enseignement.

### EDUB 4023 Didactique - Élémentaire Cr.Hrs.6

(Ancien 081.402) Étude des programmes actuels au niveau élémentaire et des méthodes pratiques d'enseignement.

### EDUB 4051 Méthodologie Générale Cr.Hrs.3

(Ancien 063.405) Étude des fondements et de l'application de la méthodologie.

### EDUB 4061 Didactique En Anglais (Secondaire) Cr.Hrs.3

(Ancien 063.406) Étude des programmes et des méthodes d'enseignement en anglais au niveau secondaire.

### EDUB 4071 L'Enseignement du Français de Base au Secondaire Cr.Hrs.3

(Ancien 063.407) Étude de l'enseignement et de l'apprentissage du français langue seconde aux niveaux présecondaire et secondaire. Familiarisation avec l'approche communicative en tenant compte du programme d'études et des ressources disponibles au Manitoba.

### EDUB 4081 Didactique en Géographie

(Secondaire) Cr.Hrs.3  
(Ancien 063.408) Étude des programmes et des méthodes d'enseignement en géographie au niveau secondaire.

### EDUB 4091 Didactique En Langues Vivantes

(Secondaire) Cr.Hrs.3  
(Ancien 063.409) Étude des programmes et des méthodes d'enseignement en langues vivantes au niveau secondaire.

### EDUB 4101 Didactique En Histoire (Secondaire) Cr.Hrs.3

(Ancien 063.410) Étude des programmes et des méthodes d'enseignement en histoire au niveau secondaire.

### EDUB 4103 Didactique En Biologie (Secondaire) Cr.Hrs.3

(Ancien 081.410) Étude des programmes et des méthodes d'enseignement en biologie au niveau secondaire.

### EDUB 4113 Didactique En Chimie (Secondaire) Cr.Hrs.3

(Ancien 081.411) Étude des programmes et des méthodes d'enseignement en chimie au niveau secondaire.

### EDUB 4123 Didactique En Informatique

(Secondaire) Cr.Hrs.3  
(Ancien 081.412) Étude des programmes et des méthodes d'enseignement en informatique au niveau secondaire.

**EDUB 4131** Didactique En Théâtre (Secondaire) Cr.Hrs.3  
(Ancien 063.413) Étude des programmes et des méthodes d'enseignement en théâtre au niveau secondaire.

### EDUB 4133 Didactique En Sciences Générales (Secondaire) Cr.Hrs.3

(Ancien 081.413) Étude des programmes et des méthodes d'enseignement en sciences générales au niveau secondaire.

### EDUB 4141 Didactique en Art (Secondaire) Cr.Hrs.3

(Ancien 063.414) Étude des programmes et des méthodes d'enseignement en art au niveau secondaire.

### EDUB 4151 Didactique En Sciences De L'écologie Humaine li Cr.Hrs.3

(Ancien 081.415) Étude des programmes et des méthodes d'enseignement en sciences de l'écologie humaine au niveau secondaire.

### EDUB 4161 Didactique en Éducation Physique

(Secondaire) Cr.Hrs.3  
(Ancien 081.416) Étude des programmes et des méthodes d'enseignement en éducation physique au niveau secondaire.

### EDUB 4171 Didactique En Physique (Secondaire) Cr.Hrs.3

(Ancien 081.417) Étude des programmes et des méthodes d'enseignement en physique au niveau secondaire.

### EDUB 4181 Didactique En Mathématiques

(Secondaire) Cr.Hrs.3  
(Ancien 081.418) Étude des programmes et des méthodes d'enseignement en mathématiques au niveau secondaire.

### EDUB 4201 Didactique du/en Français au

Secondaire Cr.Hrs.3  
Ce cours est axé autour des questions didactiques soulevées par les programmes d'études de français langue première et ceux de français langue seconde -- immersion établis, pour les niveaux 7e années à Secondaire 4, par la Division du Bureau de l'éducation française d'Education, Citoyenneté et Jeunesse Manitoba.

### EDUB 4203 Didactiques L'Approche

Transdisciplinaire Cr.Hrs.6  
Elaboration d'une unite d'enseignement menant a une synthese de la formation initiale.

## Faculté d'éducation-5000 level (EDUB)

**EDUB 5201** Lectures dirigées en curriculum, en enseignement et en apprentissage 1 Cr.Hrs.3  
(Ancien 132.520) Lectures et recherches traitant de domaines particuliers de l'étude du curriculum.

### EDUB 5221 Courants Actuels En Curriculum, En

Enseignement Et En Apprentissage 2 Cr.Hrs.3  
(Ancien 132.522) Étude de la théorie qui sous-tend les courants actuels et les problématiques émergentes dans le domaine et de leurs applications pratiques.

### EDUB 5231 COURANTS ACTUELS EN CURRICULUM, EN

ENSEIGNEMENT ET EN APPRENTISSAGE 2 Cr.Hrs.3  
(Ancien 132.523) Approfondissement de thèmes choisis qui ont fait l'objet d'études dans le EDUB 5221 (ancien



132.522).

**EDUB 5261** Introduction Aux Fondements De La Lecture Cr.Hrs.3

(Ancien 132.526) Étude de la nature de la lecture par rapport à diverses composantes du développement humaine telles que le langage, la vue, l'ouïe, la cognition et la motivation. On ne peut se faire créditer le EDUB 5261 (l'ancien 132.526) et l'ancien 063.566.

**EDUB 5271** Enseignement De La Lecture Cr.Hrs.3

(Ancien 132.527) Étude des fondements du programme d'enseignement de la lecture; objectifs du programme, conditions d'apprentissage, démarches et matériel pédagogiques et évaluation des apprentissages. On ne peut se faire créditer le EDUB 5271 (l'ancien 132.527) et l'ancien 063.567.

**EDUB 5321** Séminaire Sur Les Arts Langagiers 1 Cr.Hrs.3

(Ancien 132.532) Séminaire de recherche et de lecture, qui comprend une analyse approfondie des fondements théoriques de l'étude et de l'enseignement des arts langagiers à l'élémentaire et de la recherche qui sous-tend ces fondements. Réflexion sur la portée pratique de ces théories dans l'enseignement en ce qui a trait à la communication orale, à l'écoute et à la création dramatique. On ne peut se faire créditer le EDUB 5321 (l'ancien 132.532) et l'ancien 063.572.

**EDUB 5331** Sujets Pratiques Dans Les Arts Langagiers 2 Cr.Hrs.3

Étude des pratiques d'enseignement de l'écriture et de ses rapports avec la communication orale et la lecture. Examen attentif des démarches pédagogiques, des techniques d'évaluation, du matériel existant et des méthodologies de l'enseignement de l'épellation, de l'écriture et de la composition écrite. On ne peut se faire créditer le EDUB 5331 (l'ancien 132.533) et l'ancien 063.575.

**EDUB 5341** Fondements De La Littérature Cr.Hrs.3

(Ancien 132.532 / 132.534) Étude de la nature de la littérature par rapport aux dimensions du développement humain et de l'enseignement telles que le langage, la vision, l'audition, la cognition, la motivation et l'objectif de l'enseignement. On ne peut se faire créditer le 132.534) et le EDUB 5261 (ancien 132.526) et l'ancien 063.566.

**EDUB 5351** Problématiques actuelles en langue et en Littérature Cr.Hrs.3

(Ancien 132.535) Étude de sujets particuliers qui vise à faire connaître les courants actuels en enseignement de la langue et de la littérature.

**EDUB 5361** Fondements De La Littérature Cr.Hrs.3

(Ancien 132.536) Étude de la nature et de la psychologie de la littérature enfantine à l'élémentaire. Aperçu du matériel existant, établissement de critères d'évaluation de ce matériel et résultats des recherches portant sur l'élaboration, le niveau d'intérêt et l'utilisation du matériel. On ne peut se faire créditer le EDUB 5361 (ancien 132.536) et l'ancien 063.544.

**EDUB 5371** Littérature Pour Adolescents Et Adolescentes Cr.Hrs.3

(Ancien 132.537) Étude de la nature et de la psychologie de la littérature destinée aux élèves de la 7<sup>e</sup> à la 12<sup>e</sup> année. Aperçu du matériel existant, établissement de critères

d'évaluation de ce matériel et résultats des recherches portant sur l'élaboration, le niveau d'intérêt et l'utilisation du matériel. On ne peut se faire créditer le EDUB 5371 (ancien 132.537) et l'ancien 063.545.

**EDUB 5431** Développements Récents En Curriculum: Humanités Cr.Hrs.3

Examen des courants théoriques et des applications pratiques récents ou en émergence dans ce domaine.

**EDUB 5471** Cr.Hrs.3

(Ancien 132.547) Examen des courants théoriques et des applications pratiques récents ou en émergence dans ce domaine.

**EDUB 5531** Théorie Et Pratique De L'enseignement Du Français Cr.Hrs.6

(L'ancien 132.533) Étude de la théorie actuelle et des nouvelles pratiques de l'enseignement du français langue seconde. Examen attentif de l'analyse des procédures pédagogiques et de la tâche d'enseignement. Initiation à la recherche dans le domaine de l'enseignement d'une langue seconde. On ne peut se faire créditer le EDUB 5531 (l'ancien 132.553) et l'ancien 063.512.

**EDUB 5533** Théorie et pratique de l'enseignement du français langue seconde Cr.Hrs.3

Ce cours fournit une mise à jour des théories et des pratiques de l'enseignement et de l'apprentissage en français langue seconde (immersion et français de base).

**EDUB 5535** L'utilisation des médias en enseignement du français de base Cr.Hrs.3

Ce cours est axé autour de deux volets relatifs à l'utilisation des médias dans la salle de classe de français de base. Dans un premier temps, les étudiants développeront une appréciation critique des médias, et ce, à partir d'une étude approfondie du sujet. Dans un deuxième temps, ils apprendront à utiliser les médias pour appuyer des thèmes explorés en situation de salle de classe et à développer des stratégies pédagogiques qui en découlent.

**EDUB 5537** Théorie et pratique des arts visuels et l'enseignement du français de base Cr.Hrs.3

An examination of current methods and approaches relevant to the teaching of visual arts in the Basic French classroom with particular emphasis on the application of theory through practical activities and projects. Students will learn appropriate vocabulary as well as teaching strategies which will lead to authentic learning experiences in the Basic French classroom.

**EDUB 5539** L'enseignement du français de base et les TIC Cr.Hrs.3

Liens entre l'apprentissage, la pédagogie et les TIC. Mise à l'essai et évaluation des logiciels éducatifs. Utilisation pédagogique des logiciels comme Word, Excel, et Power Point. Développement des compétences techniques activités pédagogiques. Consultation et évaluation de sites Web. Création d'un plan de site Web pour une unité d'apprentissage. Cours en ligne.

**EDUB 5541** Enseignement Du Français Cr.Hrs.6

(L'ancien 132.554) Revue critique du programme d'études : buts et objectifs, divers aspects de la discipline du français, théorie et pratique de l'enseignement, recherche et évaluation des techniques méthodologiques pour un meilleur



enseignement du français. On ne peut se faire créditer le EDUB 5541 (l'ancien 132.544) et l'ancien 063.515.

**EDUB 5543** L'art dramatique et l'enseignement du français de base Cr.Hrs.3

Ce cours examine la littérature récente sur l'utilisation de l'art dramatique en éducation, et vise, en particulier, la théorie et la pratique de l'art dramatique dans la classe de français de base.

**EDUB 5545** French Immersion for Teachers Intermediate C/D Cr.Hrs.3

Ce cours de perfectionnement linguistique vise les enseignantes et enseignants du français langue seconde, et qui veulent se perfectionner en français par le biais de l'approche communicative.

**EDUB 5547** French Immersion for Teachers Advanced/Perfectionnement Cr.Hrs.3

Ce cours de perfectionnement linguistique vise les enseignantes et enseignants du français langue seconde, ou des personnes qui se destinent à l'enseignement du français langue seconde, et qui veulent se perfectionner en français par le biais de l'approche communicative.

**EDUB 5761** Courants Actuels en Enseignement des Mathématiques Cr.Hrs.3

(Ancien 132.576) Lectures et recherches sur l'enseignement des mathématiques (sujets particuliers).

**EDUB 5771** Diagnostic et Intervention en Enseignement des Mathématiques à l'Élémentaire Cr.Hrs.3

(Ancien 132.577) Méthodes diagnostiques et ressources orthopédagogiques en enseignement des mathématiques à l'élémentaire. On ne peut se faire créditer le EDUB 5771 (ancien 132.577) et l'ancien 081.558.

## Faculté d'éducation-7000 Level (EDUB)

**EDUB 7071** Ouvrages marquants de recherche en lecture Cr.Hrs.3

(Ancien 132.707) Examen, analyse et synthèse critiques des ouvrages marquants de recherche en lecture dans les domaines de la psychologie, de la psycholinguistique, de la sociologie et de la pédagogie de la lecture. On ne peut se faire créditer le EDUB 7071, EDUB 7070 et l'ancien 063.713.

**EDUB 7101** Recherches en langue et littérature à l'élémentaire Cr.Hrs.3

(l'ancien 132.710) Étude du curriculum en langue et en littérature à l'élémentaire. Identification et examen des questions importantes découlant des pratiques par rapport à la théorie, à la recherche et au curriculum à l'élémentaire. Les participantes et participants auront l'occasion de réaliser un projet de curriculum portant sur un domaine de recherche qui les intéresse. On ne peut se faire créditer le EDUB 7101 (ou 132.710) et l'ancien 063.755.

**EDUB 7111** RECHERCHE SUR L'ACQUISITION DE LA LANGUE ET DE LA LITTÉRATIE Cr.Hrs.3

(Ancien 132.711) Exploration des problématiques propres à l'acquisition de la langue et de la littérature susceptibles d'intéresser les enseignantes et enseignants sur le plan professionnel. Les participantes et participants feront une analyse critique des théories qui sous-tendent l'acquisition de la langue et de la littérature, de la recherche publiée et

d'observations en salle de classe. Ils auront l'occasion d'effectuer leur propre recherche sur l'acquisition de la langue et de la littérature dans un milieu éducatif. On ne peut se faire créditer le EDUB 711 (ancien 132.711) et l'ancien 063.756.

**EDUB 7161** L'enseignante et l'enseignement de langue en tant que chercheurs Cr.Hrs.3

Examen de paramètres caractéristiques des enseignantes et des enseignants en tant que chercheurs dans le contexte de leur propre salle de classe. Trois principes fondamentaux guident les participantes et participants: voix, conversation et communauté. Sous cet angle particulier, les enseignantes et enseignants de langue effectuent une recherche en salle de classe dans le but de comprendre la langue et l'enseignement par l'entremise des élèves interrogés dans le domaine du curriculum. On ne peut se faire créditer le EDUB 7161 et l'ancien 132.716 ou 063.761.

**EDUB 7181** La recherche en rédaction Cr.Hrs.3

(Ancien 132.718) Analyse critique de la recherche et des méthodes de recherche en rédaction et en pédagogie. Regard particulier sur les études classiques, l'histoire, les courants actuels et la recherche ainsi que les méthodes d'évaluation en rapport avec l'étude et l'enseignement de la rédaction. On ne peut se faire créditer le EDUB 7181 ou EDUB 7180 (ou 132.718) et l'ancien 063.763.

**EDUB 7191** Recherches sur le rôle de la langue dans l'apprentissage Cr.Hrs.3

(Ancien 132.719) Analyse critique des résultats de la recherche afin de comprendre la façon dont la langue peut faciliter l'apprentissage dans tous les domaines scolaires. Regard sur le rôle que joue la langue pour faciliter l'apprentissage des matières. Examen particulier de la recherche portant sur l'expression orale, la lecture et l'écriture en tant qu'outils servant à l'apprentissage. On ne peut se faire créditer EDUB 7191 et l'ancien 063.764

**EDUB 7201** LA LITTÉRATIE ET L'ÉLABORATION DE POLITIQUES Cr.Hrs.3

(Ancien 132.720) Un séminaire portant sur l'élaboration de politiques en littérature et leurs effets sur notre conceptualisation d'un curriculum littéraire et nos définitions de la littérature. Regard particulier sur le concept de fonctionnalité en littérature et les politiques sur l'enseignement de la littérature. On ne peut se faire créditer le EDUB 7201 (ancien 132.720) et l'ancien 063.765.

**EDUB 7341** Sujets particuliers en curriculum : humanités et sciences humaines Cr.Hrs.3

(Ancien 132.734) Lecture et recherche sur des sujets d'importance dans le domaine du curriculum en humanités et en sciences humaines.

## Faculté d'éducation- 3000 Level (EDUA)

**EDUA 3011** Mesure et Évaluation Cr.Hrs.3

(Ancien 043.301) Théorie et application pratique dans la préparation, l'utilisation et l'interprétation de tests composés par les instituteurs et les institutrices; utilisation et interprétation de divers types de tests standards; techniques de statistiques connexes.

**EDUA 3021** Principes de Programmation Scolaire Cr.Hrs.3  
(Ancien 116.302) Analyse des principes fondamentaux qui



gouvernement l'élaboration des programmes scolaires et étude de l'application de ces principes à certains programmes actuels.

**EDUA 3051** Troubles Particuliers de L'Apprentissage Cr.Hrs.3

(Ancien 043.305) Initiation à l'étude de certains troubles perçus dans le développement des élèves. Étude du rôle de l'enseignante ou de l'enseignant dans le dépistage de ces troubles et application de programmes particuliers de rééducation.

**EDUA 3061** Informatique En Éducation I Cr.Hrs.3

(Ancien 043.306) Applications pédagogiques des ordinateurs. Exploitation des logiciels, des progiciels et des didactiques applicables à l'enseignement.

**EDUA 3071** Développement Du Langage Chez Le Jeune Enfant Cr.Hrs.3

(Ancien 043.307) Étude des expériences sensorimotrices et des étapes de la communication prélinguistique et linguistique allant de l'expression vocale au développement syntaxique. Appréciation de l'importance de l'environnement linguistique et de la cognition dans le développement, l'acquisition et l'apprentissage de la langue première. Analyse particulière du développement d'une langue seconde aux niveaux préscolaire et primaire en immersion. Il est préférable mais non obligatoire de suivre le EDUA 2011 (ancien 043.201) au préalable.

**EDUA 3201** Diversité culturelle dans les écoles Cr.Hrs.3

Les écoles accueillent un grand nombre d'élèves provenant de groupes sociaux marginalisés selon, entre autres, leur race, leur ethnie, leur langue maternelle, leur religion, leur orientation sexuelle ou leur statut socioéconomique. Étude de la question de la diversité culturelle, prise dans un sens large, dans le contexte de l'enseignement. Acquisition des connaissances ainsi que des attitudes et des stratégies nécessaires pour favoriser l'équité et la qualité des apprentissages des élèves, peu importe leurs antécédents, leurs particularités ou leurs circonstances.

**EDUA 3303** Intégration et identité professionnelles Cr.Hrs.3

Développement de l'habileté à faire le lien entre la pratique et la théorie et à mettre en œuvre une gestion efficace de sa pratique pédagogique.

**EDUA 3313** Perspectives Autochtones en Contexte Scolaire Cr.Hrs.3

Introduction aux perspectives culturelles autochtones et métisses en contexte scolaire : dimensions historique, anthropologique, éthique et pédagogique. Développement de compétences professionnelles relatives à l'enseignement dans un environnement autochtone et métis.

**EDUA 3323** La pratique réflexive dans la formation professionnelle Cr.Hrs.3

Analyse d'expériences vécues lors du stage pratique menant à une prise de conscience de son propre style d'enseignement

**EDUA 3993** Éducation française en contextes minoritaire et d'immersion Cr.Hrs.3

Étude des aspects historique, démographique, culturel, linguistique, identitaire et des approches pédagogiques qui encadrent le phénomène de l'éducation française en milieu minoritaire au Manitoba (écoles d'immersion et écoles

françaises).

**Faculté d'éducation-5000 level (EDUA)**

**EDUA 5531** Counselling au Secondaire Cr.Hrs.3

EDUA l'animation de groupe et de l'acquisition des compétences connexes, particulièrement en ce qui a trait à la fonction de la conseillère ou du conseiller en milieu scolaire. On ne peut se faire créditer le EDUA 5541 (ancien 129.554) et l'ancien 043.512. Préalable ou concomitant: le EDUA 5501 (ancien 129.550) ou l'ancien 043.509.

**EDUA 5541** Counselling de Groupes Cr.Hrs.3

(Ancien 129.554) Étude des groupes, de l'animation de groupe et de l'acquisition des compétences connexes, particulièrement en ce qui a trait à la fonction de la conseillère ou du conseiller en milieu scolaire. On ne peut se faire créditer le EDUA 5541 et l'ancien 043.512. Préalable ou concomitant: le EDUA 5501 (ancien 129.550) ou l'ancien 043.509.

**EDUA 5551** Psychologie des Relations Humaines Cr.Hrs.3

(Ancien 129.555) Étude des relations interpersonnelles. Approche de type laboratoire visant à augmenter la sensibilité personnelle des étudiantes et des étudiants aux autres personnes. Cours qui s'adresse particulièrement au personnel enseignant, administratif et professionnel en milieu scolaire. On ne peut se faire créditer le EDUA 5551 (ancien 129.555) et l'ancien 043.515.

**EDUA 5571** Éducation Familiale Cr.Hrs.3

(Ancien 129.557) Étude de la sexualité humaine et des relations familiales, axée sur les résultats de la recherche, les ressources et les méthodes pédagogiques, le développement, ainsi que la collaboration avec les membres de la famille et la collectivité. On ne peut se faire créditer le EDUA 5571 (ancien 129.557) et l'ancien 043.517.

**EDUA 5581** Orientation de carrières Cr.Hrs.3

(l'ancien 129.558) Étude et application des théories sous-tendant l'orientation de carrières, le choix de carrière et la prise de décision ; évaluation et conception de programmes de connaissance de soi aux fins de prises de décision dans une contexte de counselling. On ne peut se faire créditer le EDUA 5581 et les anciens 043.513 ou 043.545.

**EDUA 5601** Introduction à l'éducation inclusive Cr.Hrs.6

(Ancien 129.560) Survol des préoccupations dans le domaine de l'éducation inclusive. Étude des barrières à l'inclusion en ce qui concerne les lois, la pédagogie, les attitudes et les organisations, de même que les modalités d'inclusion exemplaires. On ne peut se faire créditer le EDUA 5601 (ancien 129.560) et l'ancien 043.518.

**EDUA 5631** Évaluation et Programmation en Éducation Inclusive Cr.Hrs.6

(Ancien 129.563) Étude des modalités d'évaluation basées sur le curriculum et sur le fonctionnement de la classe en vue de guider l'instruction des élèves éprouvant des difficultés d'apprentissage et de comportement en contexte d'inclusion. On ne peut se faire créditer le EDUA 5631 (ancien 129.563) et l'ancien 043.536. Préalable ou concomitant : le EDUA 5601 (ancien 129.560) ou l'ancien 043.518 ou l'équivalent.

**EDUA 5661** Gestion des Programmes d'Orthopédagogie et de Soutien Cr.Hrs.3

(Ancien 129.563) Étude des modalités d'évaluation basées sur le curriculum et sur le fonctionnement de la classe en vue de guider l'instruction des élèves éprouvant des difficultés d'apprentissage et de comportement en contexte d'inclusion. On ne peut se faire créditer le EDUA 5631 (ancien 129.563) et l'ancien 043.536. Préalable ou concomitant: le EDUA 5601 (ancien 129.560) ou l'ancien 043.518 ou l'équivalent.

**EDUA 5671** Stratégies pour l'organisation de classes et d'écoles inclusives Cr.Hrs.3

(Ancien 129.567) Étude de l'organisation et de la mise en œuvre à l'échelle de l'école de mécanismes de soutien visant à favoriser l'accès à ces écoles, l'apprentissage, la socialisation, le comportement, les rapports avec la famille, la participation de professionnels de la santé et les services communautaires. Analyse des stratégies d'organisation visant à améliorer la consultation, la coopération, la collaboration et le perfectionnement professionnel. On ne peut se faire créditer le EDUA 5671 (ancien 129.567) et l'ancien 043.540. Préalable ou concomitant : le EDUA 5601 (ancien 129.560) (ou 043.518) ou l'équivalent et le EDUA 5631 (129.563) (ou 043.536) ou l'équivalent.

**EDUA 5681** Promotion d'un Comportement Responsable Cr.Hrs.3

(Ancien 129.568) Étude des besoins des enfants ayant des problèmes de comportement en milieu scolaire. Analyse de la conceptualisation des troubles du comportement, des procédures d'identification et d'évaluation de ces troubles, ainsi que des stratégies d'intervention. Le cours a pour objectif d'habiliter les enseignantes et enseignants à concevoir des stratégies d'intervention appropriées en milieu scolaire. On ne peut se faire créditer le EDUA 5681 (ancien 129.568) et l'ancien 043.542. Préalable ou concomitant : le EDUA 5601 (ancien 129.560) ou l'ancien 043.518 ou l'équivalent.

**EDUA 5701** Psychologie Sociale de l'Éducation Cr.Hrs.3

(Ancien 129.570) Examen des facteurs sociaux qui influencent le rendement et l'adaptation de l'élève à l'école. Importance accordée au fonctionnement des petits groupes et aux interactions en classe, ainsi qu'à l'analyse de la structure sociale de l'école et du rôle social de l'enseignant et de l'enseignante. On ne peut se faire créditer le EDUA 5701 (ancien 129.570) et l'ancien 043.508.

**EDUA 5731** Courants Actuels en Psychologie de l'Éducation 1 Cr.Hrs.3

(Ancien 129.573) Examen des courants théoriques et des applications pratiques récents ou en émergence dans ce domaine.

**EDUA 5741** Courants Actuels en Psychologie de l'Éducation 2 Cr.Hrs.3

(Ancien 129.574) Étude des fondements théoriques et des applications pratiques de développements récents et de nouveaux courants dans ce domaine.

**EDUA 5751** Psychologie de l'Enseignement en Contexte Scolaire Cr.Hrs.3

(Ancien 129.575) Étude des théories fondamentales d'apprentissage telles qu'elles sont appliquées à l'enseignement en salle de classe et utilisées dans l'élaboration des programmes. Analyse du traitement de

l'information cognitive et des aspects comportemental, développemental et psychosocial. On ne peut se faire créditer le EDUA 5751 (ancien 129.5751) et l'ancien 43.543. Préalable: le EDUA 1801 (ancien 129.180), le PSYC 1201 (ancien 017.120), l'ancien 043.202 ou l'équivalent.

**EDUA 5761** Psychologie de l'Enseignement en Contexte Scolaire Cr.Hrs.3

(Ancien 129.576) Conçu principalement, mais non exclusivement, à l'intention des enseignantes, des enseignants et du personnel scolaire. Étude critique des fondements théoriques et des modèles d'enseignement principaux. Intégration et application d'approches et de stratégies d'enseignement existantes ou nouvelles. On ne peut se faire créditer le EDUA 5761 (ancien 129.576) et l'ancien 043.544. Préalable: le EDUA 1801 (ancien 129.180) ou le PSYC 1201 (ancien 017.120), l'ancien 043.202 ou l'équivalent.

**EDUA 5801** Introduction à la recherche en éducation Cr.Hrs.3

(Ancien 129.580) Étude de l'investigation scientifique dans le domaine de l'éducation. Examen des méthodes de recherche et d'analyse statistique dans le contexte éducatif. Cours particulièrement recommandé aux étudiantes et aux étudiants qui s'intéressent à l'évaluation et à la mise en application des résultats de la recherche. On ne peut se faire créditer le EDUA 5801 (ancien 129.580) et l'ancien 043.503.

**EDUA 5811** Théories de Construction de Tests Cr.Hrs.3

(Ancien 129.581) Étude des problèmes reliés à l'analyse d'items, à la validité, à la fidélité et à l'utilisation des tests dans le processus d'évaluation en milieu scolaire. Considération des tests normatifs et critériés. On ne peut se faire créditer le EDUA 5811 (ancien 129.581) et l'ancien 043.504.

**EDUA 5851** Application de l'Informatique en Éducation 2 Cr.Hrs.3

(Ancien 129.585) Cours avancé sur l'utilisation de logiciels d'apprentissage dans les classes ordinaires et dans l'enseignement aux élèves ayant des difficultés d'apprentissage. On ne peut se faire créditer le EDUA 5851 (ancien 129.585) et l'ancien 043.526. Préalable: le EDUA 5761 (ancien 129.576) ou l'ancien EDUA 5281 (ancien 081.528) ou l'autorisation du titulaire du cours, ou l'ancien 043.306.

**EDUA 5901** Éducation et Processus du Développement 1 Cr.Hrs.3

(Ancien 129.590) Survol du processus du développement de la conception à la puberté. Importance accordée aux fondements biologiques, au développement cognitif et aux aspects sociaux du comportement dans leurs rapports avec le processus éducatif. On ne peut se faire créditer le EDUA 5901 (ancien 129.590) et l'ancien 043.506.

**EDUA 5911** Éducation et Processus de Développement 2 Cr.Hrs.3

(Ancien 129.591) Étude de la croissance et du développement à l'âge postérieur à la puberté. Attention particulière accordée à leurs effets sur l'apprentissage au niveau secondaire. On ne peut se faire créditer le EDUA 5911 (ancien 129.591) et l'ancien 043.507.

**EDUA 5921** Le Jeu Chez l'Enfant Cr.Hrs.3

(Ancien 129.592) Examen du rôle du jeu dans



l'apprentissage chez l'enfant, en incluant la perspective historique. Discussion du jeu en tant que partie intégrante du développement de l'enfant. Distinction entre les activités ludiques et non ludiques, considération des attributs conceptuels, perceptuels, linguistiques et physiques du jeu. On ne peut se faire créditer le EDUA 5921 (ancien 129.592) et l'ancien 043.529.

**EDUA 5931** Observation du Comportement de l'Enfant Cr.Hrs.3

(Ancien 129.593) Étude des techniques d'observation qualitatives qui peuvent être utilisées en milieu scolaire pour mieux comprendre le comportement de l'enfant, ses modes de penser et ses motivations. On ne peut se faire créditer le EDUA 5931 (ancien 129.593) et l'ancien 043.530.

**EDUA 5011** Introduction à L'Administration Scolaire Cr.Hrs.3

(Ancien 129.501) Étude des concepts, des tâches et des processus de l'administration tels qu'ils s'appliquent à l'éducation. On ne peut se faire créditer le EDUA 5011 (ancien 129.501) et l'ancien 116.501.

**EDUA 5021** Principes d'Élaboration de Curriculum Cr.Hrs.3

(Ancien 129.502) Étude des différentes approches d'élaboration de curriculum, des facteurs qui en influencent le processus d'élaboration et des aspects de l'implantation. Participation de l'enseignant ou de l'enseignante à l'élaboration du curriculum. On ne peut se faire créditer le EDUA 5021 (ancien 129.502) et l'ancien 116.502.

**EDUA 5031** Gestion des établissements scolaires Cr.Hrs.3

(Ancien 129.503) Étude des modes fondamentaux d'organisation et du rôle de l'administration au sein d'un établissement scolaire. Attention particulière accordée à la prise de décision, à la communication, à la planification et à l'évaluation. On ne peut se faire créditer le EDUA 5031 (ancien 129.503) et l'ancien 116.503.

**EDUA 5041** Administration du Personnel Scolaire Cr.Hrs.3

(Ancien 129.504) Étude des rapports de l'administratrice ou de l'administrateur avec le personnel, en mettant l'accent sur la politique de gestion, le perfectionnement et la motivation du personnel. On ne peut se faire créditer le EDUA 5041 (ancien 129.504) et l'ancien 116.504.

**EDUA 5061** Principes de la Supervision en Enseignement Cr.Hrs.3

(Ancien 129.506) Étude des modèles théoriques d'enseignement et de supervision et de leur application dans la pratique. On ne peut se faire créditer le EDUA 5061 (ancien 129.506) et l'ancien 116.506.

**EDUA 5071** Comportement Organisationnel en Éducation Cr.Hrs.3

(Ancien 129.507) Étude des théories et des recherches en sciences du comportement et en sciences sociales qui ont trait au comportement des individus et des groupes dans une structure organisationnelle. Analyse de la portée de ces théories et recherches par rapport à l'administration des établissements scolaires. On ne peut se faire créditer le EDUA 5071 (ancien 129.507) et l'ancien 116.507.

**EDUA 5081** Courants Actuels en Administration Scolaire 1 Cr.Hrs.3

(Ancien 129.508) Étude des fondements théoriques et de l'application pratique des développements récents et des

nouveaux courants en administration scolaire.

**EDUA 5091** Courants Actuels en Administration Scolaire 2 Cr.Hrs.3

(Ancien 129.509) Prolongement de l'étude de certains sujets abordés dans le EDUA 5081 (ancien 129.508) en vue d'approfondir les études entreprises dans ces domaines.

**EDUA 5101** Questions importantes en administration scolaire Cr.Hrs.3

(Ancien 129.510) Étude de sujets d'importance en administration scolaire. On ne peut se faire créditer le EDUA 5101 (ancien 129.510) et l'ancien 116.510.

**EDUA 5241** Problèmes en rapport avec l'éducation interculturelle Cr.Hrs.3

(Ancien 129.524) Étude de problèmes particuliers auxquels les minorités culturelles font face dans le milieu scolaire. On ne peut se faire créditer le EDUA 5241 et l'ancien 116.531.

**EDUA 5481** Techniques de counselling Cr.Hrs.3

(Ancien 129.548) Acquisition de techniques de counselling telles que l'attention et l'écoute, le reflet du contenu et des émotions, la rétroaction et la révélation de soi, la focalisation et le résumé. On ne peut se faire créditer le EDUA 5481 (129.548) et l'ancien 129.556 ou l'ancien 043.516. Préalable ou concomitant: EDUA 5501 (129.550) ou l'ancien 043.509. Une note de réussite ou échec sera attribuée pour ce cours.

**EDUA 5491** Stage en counselling Cr.Hrs.3

(Ancien 129.549) Situation réelle de counselling où les étudiantes et les étudiants auront l'occasion, sous la supervision de professionnels compétents et avec l'appui de leur professeur ou de leur professeure, de mettre en pratique les techniques de counselling qu'ils ont apprises. On ne peut se faire créditer le EDUA 5491 et les anciens 129.549 ou 043.516. Préalables ou concomitants: EDUA 5501 (129.550) (ou 043.509) et EDUA 5481 (129.548). Une note de réussite ou échec sera attribuée pour ce cours.

**EDUA 5501** Théories de Counselling Cr.Hrs.3

(Ancien 129.550) Étude de la philosophie et des théories du counselling. Sujets importants en orientation et en counselling scolaires. On ne peut se faire créditer le EDUA 5501 (ancien 129.550) et l'ancien 043.509.

**EDUA 5511** Counselling à l'élémentaire Cr.Hrs.3

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**EDUA 5521** Counselling et éthique Cr.Hrs.3

(Ancien 129.552) Introduction au code de déontologie des conseillères et des conseillers. Discussion des problématiques morales en lien avec les sujets suivants: consentement libre et éclairé, confidentialité, tenue des dossiers, respect des limites, formation et compétence, supervision clinique, multiculturalisme et diversité. Possibilité de mettre en pratique des modèles de prise de décision.

**Faculté d'éducation- 7000 Level (EDUA)**

**EDUA 7011** Administration scolaire en tant que champ d'étude et d'application Cr.Hrs.3

(Ancien 129.701) Aperçu de l'administration scolaire. Importance particulière accordée à quelques-unes des grandes traditions intellectuelles du domaine de l'administration scolaire et analyse de certaines forces qui influencent la pratique de l'administration. On ne peut se



faire créditer le EDUA 7011 (ancien 129.701) et l'ancien 116.731.

**EDUA 7021** La Politique en Education Cr.Hrs.3  
(Ancien 129.702) Étude des caractéristiques politiques des organismes scolaires: répartition des pouvoirs dans la communauté, gouvernement local, changements politiques et rôle des divers systèmes de valeurs en éducation. On ne peut se faire créditer le EDUA 7021 (ancien 129.702) et l'ancien 116.702.

**EDUA 7031** Le financement scolaire Cr.Hrs.3  
(Ancien 129.703) Étude des dimensions économiques et financières de l'éducation. Analyse des coûts et des dépenses, des sources et des types de revenus, de la productivité et de l'efficacité, de la planification et du budget. On ne peut se faire créditer le EDUA 7031 et l'ancien 116.703.

**EDUA 7041** Aspects légaux en éducation Cr.Hrs.3  
(Ancien 129.704) Étude des questions légales dans le monde de l'éducation. On ne peut se faire créditer le EDUA 7041 (ancien 129.704) et l'ancien 116.704.

**EDUA 7051** Perspectives théoriques de l'administration scolaire Cr.Hrs.3  
(Ancien 129.705) Étude des tendances en matière de théorie organisationnelle et de pensée administrative ainsi que de la portée de celles-ci sur l'étude et l'administration d'organisations scolaires. On ne peut se faire créditer le EDUA 7051 (ancien 129.705) et l'ancien 116.705.

**EDUA 7061** Planification organisationnelle et développement éducationnel Cr.Hrs.3  
Revue des diverses approches à la planification et au développement éducationnel. Importance particulière accordée au développement systématique des organismes d'enseignement. On ne peut se faire créditer les EDUA 7061 et l'ancien 116.709 ou 129.706.

**EDUA 7071** Analyse des Organismes D'Enseignement Cr.Hrs.3  
(Ancien 129.707) Application de méthodes d'analyse organisationnelle aux établissements d'enseignement. On ne peut se faire créditer le EDUA 7-071 et l'ancien 129.707 ou 116.710.

**EDUA 7081** Principes d'organisation et de mise en application du curriculum Cr.Hrs.3  
Revue des approches de modification et d'application du curriculum. Importance particulière accordée aux approches systématiques de modification des programmes en éducation. On ne peut se faire créditer le EDUA 7081 et l'ancien 116.706.

**EDUA 7091** Séminaire - Problèmes Administratifs en Education Cr.Hrs.3  
(Ancien 129.709) Application de concepts théoriques à des situations concrètes. On ne peut se faire créditer le EDUA 7091 et l'ancien 116.706 ou 129.709.

**EDUA 7101** Sujets Particuliers en Administration Scolaire 1 Cr.Hrs.3  
(Ancien 129.710) Lecture sur des sujets d'importance en administration scolaire.

**EDUA 7111** Cr.Hrs.3  
(Ancien 129.711) Recherche-action sur des sujets d'importances en administration scolaire.

**EDUA 7211** Éducation et société Cr.Hrs.3  
(Ancien 129.721) Étude du rapport qui existe entre l'éducation et la société. Regard particulier sur l'apprentissage ethnique, la famille, le statut socioéconomique et le rôle que joue l'école en tant qu'agent de socialisation dans un contexte canadien. On ne peut se faire créditer le EDUA 7211 et l'ancien 116.736

**EDUA 7241** Valeurs en éducation Cr.Hrs.3  
(Ancien 129.724) Étude de la place occupée par les valeurs en éducation. Approfondissement de la notion de valeur et de son omniprésence dans le domaine de l'éducation, ainsi que des approches, des tendances et des questions relatives aux valeurs en éducation. On ne peut se faire créditer EDUA 7241 et l'ancien 116.732.

**EDUA 7281** Séminaire sur l'éducation interculturelle 2 Cr.Hrs.3  
(Ancien 129.728) Analyse critique des approches et de la recherche en éducation interculturelle. On ne peut faire créditer EDUA 7281 (EDUA 7280) et l'ancien 116.725.

**EDUA 7511** Séminaire en counselling Cr.Hrs.3  
(Ancien 129.751) Progrès d'ordre professionnel, théorique et scientifique. Questions actuelles importantes. Problèmes sociaux particuliers en counselling. On ne peut se faire créditer EDUA 7511 et l'ancien 043.703.

**EDUA 7521** Séminaire - Stage en counselling Cr.Hrs.6  
(Ancien 129.752) Expérience supervisée en counselling individuel et de groupe. Analyse d'études de cas au moyen d'audiocassettes et de vidéocassettes. Exige un minimum de 180 heures de stage. On ne peut se faire créditer le EDUA 7521 ou l'ancien 043.704. Préalable : le EDUA 5481 (ancien 129.548), l'ancien 129.556 ou l'ancien 043.516.

**EDUA 7541** Programmes d'orientation de carrières Cr.Hrs.3  
(Ancien 129.754) Cours destiné aux conseillères et aux conseillers qui souhaitent approfondir leurs connaissances des programmes d'orientation de carrières. Examen et évaluation de programmes et de diverses techniques de counselling. Elaboration de programmes innovateurs qui répondent aux besoins de ceux et celles qui ont recours aux services de counselling. On ne peut se faire créditer le EDUA 7541 et l'ancien 132.754 ou 043.719.

**EDUA 7551** Théories en counselling Cr.Hrs.3  
Objectifs du counselling, évaluation des résultats du counselling, théories de la personnalité et du counselling. On ne peut se faire créditer le EDUA 7551 et l'ancien 129.755 ou 043.705.

**EDUA 7601** Séminaire en éducation inclusive Cr.Hrs.6  
(Ancien 129.760) Forum de discussions sur des sujets reliés à divers handicaps. Étude en profondeur de problèmes reliés aux besoins professionnels particuliers des étudiants et des étudiantes. On ne peut se faire créditer le EDUA 7601 (ancien 129.760) et l'ancien 043.705.

**EDUA 7611** Séminaire sur L'Éducation des Enfants aux Prises avec des Troubles de Comportement Cr.Hrs.3  
(Ancien 129.761) Course à l'intention des enseignants et des enseignantes, et des conseillers et des conseillères



scolaires. Études des connaissances théoriques et des outils nécessaires à l'élaboration et à la mise en œuvre des programmes éducatifs pour les élèves aux prises avec des troubles de comportement. On ne peut se faire créditer le EDUA 7611 et l'ancien 043.707 ou 129.761. Préalable ou concomitant: le EDUA 5601 (ancien 129.560 ou 043.518) ou le EDUA 5681 (ancien 129.568 ou 043.542).

**EDUA 7651** Stage en éducation inclusive Cr.Hrs.6  
Un minimum de 200 heures de stage supervisées s'inscrivant dans un contexte d'éducation inclusive. Des séminaires sont prévus afin de créer un cadre qui facilite l'étude dirigée et la discussion. Préalable: 18 crédits au niveau 5000 en éducation inclusive ou l'équivalent. On ne peut se faire créditer EDUA 7651 et les anciens 129.764 ou 043.706. Une note réussite ou échec sera attribuée pour ce cours.

**EDUA 7741** Sujets Particuliers en Psychologie de L'Éducation Cr.Hrs.3  
(Ancien 129.774) Lecture et recherche sur des sujets d'importance en psychologie de l'éducation.

**EDUA 7761** Techniques d'entrevue avec les enfants & les adolescents et adolescentes Cr.Hrs.3  
Étude des principes et des méthodes d'entrevue et de counselling auprès d'enfants, d'adolescents et d'adolescentes, de parents, d'enseignants et d'enseignantes, ou de toute autre personne intervenant auprès de l'enfant. Intégration de la théorie et de la pratique relatives au processus de communication et d'observation diagnostique et thérapeutique en situation naturelle auprès de l'enfant. On ne peut se faire créditer le EDUA 7761 et l'ancien 129.776 ou 043.717. Préalable: le EDUA 5821 (ancien 129.582 ou 043.505), le EDUA 5551 (ancien 129.555 ou 043.515), ou le EDUA 5481 (ancien 129.548) et le EDUA 5491 (ancien 129.549, 129.556 ou 043.516).

**EDUA 7801** Méthodes de Recherches en Education Cr.Hrs.3  
(Ancien 129.780) Etude des devis expérimentaux et des techniques de collecte de données dans la recherche éducative dans le milieu: devis quasi expérimentaux, enquête et techniques d'observation, simulation, analyse du contenu et sociométrie. On ne peut se faire créditer le EDUA 7800 et l'ancien 043.709. Préalable: le EDUA 5801 (ancien 129.580) ou l'ancien EdUA 6801 (ancien 129.680) ou l'ancien 043.610 ou l'autorisation écrite de la professeure ou du professeur.

**EDUA 7841** Methodes de recherche qualitative en Éducation Cr.Hrs.3  
(Ancien 129.784) Introduction aux méthodes de recherche qualitative. Discussion de l'éthique de la recherche et des théories qui sous-tendent la recherche qualitative. Cours axé sur les démarches à suivre pour effectuer une recherche, y compris la méthodologie et la collecte et l'analyse de données. Préalable: EDUA 5801 (ancien 129.580) ou l'ancien 043.503 ou l'équivalent.



## Postgraduate Medical Education

**Dean:** Brian Postl

**Associate Dean(s):** Associate Dean (Postgraduate Medical Education): Cliff Yaffe

**Campus Address/General Office:** 260 Brodie Centre, 260-727 McDermot Avenue, Winnipeg MB R3E 3P5

**Telephone:** (204) 789 3290

**Fax:** (204) 789 3929

**Email Address:** [PGME@med.umanitoba.ca](mailto:PGME@med.umanitoba.ca)

**Website:** <http://umanitoba.ca/medicine>

**Program Manager, Postgraduate Medical Education:** Geeta Raichura

**(Postgraduate Medical Education (PGME) is not an undergraduate program)**

Postgraduate medical education (PGME) at the University of Manitoba is comprised of a variety of training programs. Programs are usually organized to be in one of three categories:

- Programs accredited by the Royal College of Physicians and Surgeons of Canada (RCPSC).
- Programs accredited by the College of Family Physicians of Canada (CFPC).
- Other training and fellowship programs approved by the Faculty of Medicine.

Programs in the first two categories are most likely to be recognized towards obtaining a license to practice medicine. The RCPSC and CFPC provide accreditation for the training program content and evaluative processes. After the successful completion of their training, candidates are eligible to challenge the appropriate national specialty exams for their particular programs. The complete listing of these programs follows in this section under the heading Description of Programs. The specific and detailed national requirements for individual programs may be obtained from the Postgraduate Medical Education Office.

The University of Manitoba is accredited every six years by the RCPSC and the CFPC to administer the training programs, and supports all training programs in a variety of ways.

Several hospitals and healthcare facilities in Winnipeg and rural areas outside of Winnipeg are used as training sites. The main teaching sites include: Health Sciences Centre, St. Boniface General Hospital, Seven Oaks General Hospital, Misericordia Health Centre, Dauphin General Hospital, and Brandon General Hospital.

### General Regulations

Once accepted into a training program the student (now usually referred to as a "resident") must pay a registration fee to the University of Manitoba. Each resident must register every subsequent year of his or her training program in person at the PGME office.

The resident must also register with the College of Physicians and Surgeons of Manitoba so that his or her name is entered onto the Clinical Assistant Register Part 1.

The resident must obtain malpractice insurance, usually from the Canadian Medical Protective Association or its equivalent.

Residents enrolled in postgraduate residency programs are expected to conform to such new requirements as may be adopted from year to year.

Residents must apply directly to either the Royal College of Physicians and Surgeons or the College of Family Physicians of Canada for evaluation of training and for permission to sit the college examinations. Being a resident in a program does not automatically enrol the resident for such examination or certification.

### Eligibility



Graduates of Canadian medical schools are eligible for consideration of PGME training, and are required to challenge the Medical Council of Canada Qualifying Examination, Part I prior to commencing their residencies.

Generally, Canadian citizens or landed immigrants are eligible for provincial funding for residency training under the contract established with the Professional Association of Residents and Interns of Manitoba (PARIM).

International medical graduates (IMGs) are eligible to apply for admission after they have challenged the Medical Council of Canada Evaluating Examination. IMGs must be Canadian or permanent residents to be eligible to apply for postgraduate medical training. IMGs may apply for possible residency positions through the CaRMS match (see below).

Visa-trainees represent a special training category for entrance to postgraduate medical training. The visa-trainee applicant must pass the Medical Council of Canada Evaluating Examination and be sponsored by an agency which has entered into a contract with the University of Manitoba for such training.

All residents must receive remuneration from an institution recognized by the Government of Manitoba while registered in a training program in PGME.

### **Criteria for Selection**

Selection for admission to the various training programs will be made primarily on the basis of scholastic, personal and professional attributes as determined by academic records, personal interviews, letters of reference and in-training evaluation reports. The selection process is determined by each particular training program through a set selection process. Admission to the postgraduate training year one (PGY1) for most programs is conducted through the CaRMS PGY1 match outlined below.

### **University Registration**

All postgraduate trainees and fellows (not registered with the Faculty of Graduate Studies for M.Sc. or Ph.D. degrees) must be registered as postgraduate trainees in the Faculty of Medicine. The normal registration period is June 15 to July 1 each year, and is done by the Faculty PGME Office.

### **Program Administration**

The departments which provide PGME training programs in the Faculty of Medicine are: Anesthesia, Community Health Sciences, Family Medicine, Biochemistry and Human Genetics, Emergency Medicine, Internal Medicine, Medical Microbiology, Obstetrics, Gynecology and Reproductive Sciences, Otolaryngology, Pathology, Pediatrics and Child Health, Psychiatry, Radiology and Surgery. Some departments offer more than one program, and may also offer training in sub-specialty areas.

Each program has a Program Director and a Resident Program Committee to administer the training program. There are also program coordinators at each training site. The Program Director of each program reports both to the Department Head and the Associate Dean of PGME.

Beyond the program level, administrative matters pertaining to postgraduate residency training programs are the responsibility of the Associate Dean for PGME and the Faculty PGME Executive Committee and its subcommittees. These committees are responsible for reviewing programs, allocation of residency positions, hearing resident appeals, and other duties as outlined in the terms of reference for each committee. The committees make recommendations to both the Dean of the faculty and the Faculty Executive Committee.

### **Description of Programs**

Postgraduate medical education will generally follow one of two pathways leading to licensure eligibility as described below.

#### **College of Family Physicians of Canada Accredited Programs**

The training program for family physicians offers a two-year basic program in outpatient, in-hospital and community settings. This program is composed of several streams (urban, rural, aboriginal, bilingual and DND) and the program leads to eligibility for certification with the College of Family Physicians of Canada (CFPC).



A small number of positions are also available from time to time for enhanced training within the Family Medicine Training Program for a third year of training in Emergency Medicine, Anesthesia and Palliative Care. Some of these enhanced positions may be associated with a return of service requirement. A six month training program in the Care of the Elderly is also available from time to time.

**Royal College of Physicians and Surgeons of Canada Accredited Programs**

The Faculty of Medicine offers a wide range of specialty and sub-specialty programs leading to eligibility for certification with the Royal College of Physicians and Surgeons of Canada. Programs vary in length from 2-7 years of medical training.

**Primary Specialties:**

Anatomical Pathology  
 Cardiac Surgery  
 Diagnostic Radiology  
 Internal Medicine  
 Neurology (Adult)  
 Nuclear Medicine  
 Ophthalmology  
 Orthopedic Surgery  
 Pediatrics  
 Plastic Surgery  
 Radiation Oncology  
 Medical Microbiology

Anesthesia  
 Community Medicine  
 Emergency Medicine  
 General Surgery  
 Medical Genetics  
 Neurosurgery  
 Obstetrics and Gynecology  
 Otolaryngology  
 Physical Medicine and Rehabilitation  
 Psychiatry  
 Urology

**Subspecialty Programs\***

(available only with completion in a primary specialty):

Cardiology (Adult)  
 Critical Care Medicine  
 Gastroenterology  
 Gynecologic Oncology  
 Infectious Diseases (Child & Adult)  
 Medical Oncology  
 Nephrology (Child & Adult)  
 Rheumatology (Adult)  
 Vascular Surgery  
 Palliative Medicine

Clinical Immunology and Allergy (Child & Adult)  
 Endocrinology and Metabolism (Adult)  
 Geriatric Medicine  
 Hematology (Child & Adult)  
 Maternal and Fetal Medicine  
 Neonatal-Perinatal Medicine  
 Respiratory Medicine (Child & Adult)  
 Thoracic Surgery  
 Emergency Medicine (Child)  
 Developmental Pediatrics

**NOTE:** These programs require different primary specialty credits, and may not be offered every year at the University of Manitoba.

**Application Procedures:**

All applicants for the PGY1 year of programs accredited by the RCPSC and CFPC must apply through the Canadian Residency Matching Service (CaRMS). All graduates of Canadian medical schools and international medical schools who are Canadian citizens or permanent residents and who have had no prior postgraduate medical training in Canada or the United States are eligible for the CaRMS match.

Applications for positions beyond the entry PGY1 year should be made at the PGME Office, 260 Brodie Centre or to Program Director for the specific program. Availability of positions will vary from year to year and are not guaranteed for any program. No resident can be accepted unless a funded position is available.

**The Canadian Resident Matching Service (CaRMS)**

This matching service is an autonomous, national organization of the Association of Canadian Medical Colleges. It provides an orderly method for students to select where to pursue postgraduate medical education and for program directors to rank the applicants they wish to enroll. A second matching process (the second iteration) by CaRMS is subsequently available (after the 1st CaRMS match) to medical students not matched in the first iteration, and other medical graduates who have already received some prior postgraduate training. All information about registration and matching processes is available on the CaRMS website: [www.CaRMS.ca](http://www.CaRMS.ca). There are listings of all programs on their website.



### Evaluation of Residents in Postgraduate Medical Education Programs

Evaluation at all levels is based primarily on clinical performance in the patient care setting. The Program Director and the Resident Program Committee in each program are responsible for the implementation of the evaluation process in their own program. At the end of each clinical rotation or at other appropriate stages of the program, each trainee is evaluated by an in-training evaluation report appropriate to that program and training level. The evaluator(s) discusses the evaluation with the trainee and the report is forwarded to the program director. The written evaluation report should be signed by the resident to indicate that he or she has seen the report. This ongoing evaluation process may be supplemented by written examinations, oral examinations, supervised history and physical examination and by direct observation of clinical and technical skills.

When a resident receives an unsatisfactory evaluation or examination result, the program director will review the evaluation with the resident. Unsatisfactory evaluations will also be discussed in a confidential manner at the Resident Program Committee meeting. The committee will make recommendations regarding remedial training. If a subsequent remedial period is also evaluated as being unsatisfactory, the program director will contact the Associate Dean for Postgraduate Medical Education and the Probation Protocol and Procedure will be instituted. A failed probation period may result in a resident being discharged from his or her training program.

The Faculty Executive Council reserves the right to require any student to withdraw from the program of enrolment when it believes the student to be unsuited, on general considerations of scholarship, professional fitness or professional conduct for post-graduate medical education. However, the Faculty of Medicine does not have a professional unsuitability by-law. The right to require a student to withdraw on the basis of professional unsuitability may arise through the professional unsuitability by-law of the College of Physicians and Surgeons. This right prevails notwithstanding any other provision in the faculty regulations.

### Appeals

A postgraduate trainee who wishes to appeal the results of any aspect of the evaluation procedure must follow the written guidelines established by the PGME Committee and the Faculty of Medicine. These guidelines may be obtained from the PGME Office.



Student Bus Passes	Answers Information Booth,
Career Counselling	1 <sup>st</sup> Floor, University Centre Student Counselling and Career Centre 474 University Centre
Computer Accounts	<a href="http://umanitoba.ca/claimid">umanitoba.ca/claimid</a>
Graduation and Convocation	<a href="http://umanitoba.ca/registrar">umanitoba.ca/registrar</a>
Fee Assessment	Aurora Student; go to Enrolment and Academic Records
Financial Aid and Awards	<a href="http://umanitoba.ca/student/fin_awards">umanitoba.ca/student/fin_awards</a>
Medical Insurance	UMSU Health and Dental Office, 110 University Centre
Payment of Fees	(International Students: Registrar's Office, 400 University Centre) <a href="http://umanitoba.ca/feepayment">umanitoba.ca/feepayment</a> , Cashiers Office, 138 University Centre and P001 Pathology Building
Personal Counselling	Chaplains' Association, 102Y University Centre
Registration	<a href="http://umanitoba.ca/registrar">umanitoba.ca/registrar</a> (for information)
Student I.D. Cards	Aurora Student (to activate registration) <a href="http://umanitoba.ca/registrar">umanitoba.ca/registrar</a>
T2202A Education Tax Forms	Aurora Student; go to Enrolment and Academic Records and then Canadian Tax Forms
Transferring Faculties/Schools	<a href="http://umanitoba.ca/admissions">umanitoba.ca/admissions</a>
Transit from University 1	Aurora Student; go to Enrolment and Academic Records, and then to Declarations
Transcripts	<a href="http://umanitoba.ca/registrar">umanitoba.ca/registrar</a>



## Facilities, Services and Resources

The following is a list of selected facilities, services and resources which includes contact information for each of the University's colleges.

### ***Aboriginal Student Centre***

**Office:** 121 Aboriginal House

**Telephone:** (204) 474 8850 **Fax:** (204) 275 3142

**E-mail:** [asc@cc.umanitoba.ca](mailto:asc@cc.umanitoba.ca)

**Website:** [umanitoba.ca/student/asc/](http://umanitoba.ca/student/asc/)

- Academic Assistance to Aboriginal students
- tutorial referrals
- advocacy
- cultural support
- Elder-In-Residence
- traditional teachings, sharing circles,
- annual Traditional Graduation Powwow
- emotional/personal support
- Aboriginal Student Lounge
- financial information
- recreational, political and cultural events

### ***Aboriginal Student Association***

**Telephone:** (204) 474-8396

**Email:** [UMASA2010@gmail.com](mailto:UMASA2010@gmail.com)

**Website:** [umanitoba.ca/student/asc/umasa.html](http://umanitoba.ca/student/asc/umasa.html)

a service group fully funded by the University of Manitoba Students' Union

### ***Admissions Office***

424 University Centre

**Telephone:** (204) 474 8808 **North America Toll Free:** (800) 224 7713

**Fax:** (204) 474 7554

**E-mail:** [admissions@umanitoba.ca](mailto:admissions@umanitoba.ca)

**Website:** [umanitoba.ca/student/admissions](http://umanitoba.ca/student/admissions)

- Application Information
- Admission Requirements

### ***Answers Information***

1st floor University Centre

**Telephone:** (204) 474 8211

- information on nearly everything on campus
- Ticketmaster outlet: tickets to most campus and off-campus events
- transit post-secondary discounted bus passes
- free phones and sales of long distance phone cards
- campus lost and found



### **Book Exchange**

Archives Book Exchange  
107 Helen Glass Centre  
**Telephone:** (204) 474-6511

- used textbooks sale and exchange

### **Book Store**

**Fort Garry Campus**  
**Store Hours Information Line:** (204) 474 8178  
**Telephone:** (204) 474 8321 **Toll Free in Canada:** (800) 310 3331  
**Fax:** (204) 474 7555  
**Website:** [umanitoba.ca/bookstore](http://umanitoba.ca/bookstore)

### **Bannatyne Campus**

**Telephone:** (204) 789 3601  
**Fax:** (204) 789 3901 **Toll Free Fax:** (800) 361 2005

- owned and operated by the University of Manitoba
- textbooks, reference books, special orders, computers and software, art supplies, stationery, crested clothing, and giftware
- Computers on Campus, located at both stores
- Lists of required textbooks and course materials are available in August so that course materials may be purchased before classes begin. The Book Store also “buys back” reconfirmed textbooks for cash.
- Mail order service is also provided by writing, phoning, or faxing the Book Store

### **Cashiers Office**

#### **Locations:**

#### **Fort Garry Campus**

Room 138 University Centre  
**Telephone:** (204)474-8222  
(204)474-8716  
**Fax:** (204)474-7646

#### **Bannatyne Campus**

Room P001 Pathology Bldg  
**Telephone:** (204)789-3349  
**Fax:** (204)789-3935

**Office hours:** Monday- Friday 8:30-4:00pm

**Email:** [stdntfee@cc.umanitoba.ca](mailto:stdntfee@cc.umanitoba.ca)

**Website:** [umanitoba.ca/admin/financial\\_services/revcap/StudentAccounts.htm](http://umanitoba.ca/admin/financial_services/revcap/StudentAccounts.htm)



### Chaplains' Association

**Fax:** (204) 275 8098

**Email:** [Ken\\_Stupak@umanitoba.ca](mailto:Ken_Stupak@umanitoba.ca)

**Website:** [umanitoba.ca/student/resource/chaplains](http://umanitoba.ca/student/resource/chaplains)

- offers support to all students regardless of religion

Chaplains' Secretary	102 Y University Centre	(204) 474 8721
Jewish	149 University Centre	(204) 474 9325
Lutheran	102 D University Centre	(204) 474 8386
Mennonite	102 E University Centre	(204) 474 9691
Pentecostal	102 X University Centre	(204) 474 8389

### Colleges

#### St. Andrew's College

General Office  
29 Dysart Road, Winnipeg, MB R3T 2M7  
**Telephone:** (204) 474-8895  
**Fax:** (204) 474-7624  
**Email:** [St\\_Andrews@umanitoba.ca](mailto:St_Andrews@umanitoba.ca)  
**Website:** [umanitoba.ca/colleges/st\\_andrews](http://umanitoba.ca/colleges/st_andrews)

#### St John's College

General Office  
92 Dysart Road, Winnipeg MB R3T 2M5  
**Telephone:** (204) 474 8531  
**Manitoba Toll Free:** [1800 432 1960 ext. 8531](tel:18004321960)  
**Fax:** (204) 474 7610  
**Email:** [Stjohns\\_College@umanitoba.ca](mailto:Stjohns_College@umanitoba.ca)  
**Website:** [umanitoba.ca/colleges/st\\_johns](http://umanitoba.ca/colleges/st_johns)  
**Student Council Office (room 126):** (204) 474 9583

#### St. Paul's College

General Office  
70 Dysart Road, Winnipeg, MB R3T 2M6  
**Telephone:** (204) 474-8575  
**Fax:** (204) 474-7620  
**Email:** [stpauls@umanitoba.ca](mailto:stpauls@umanitoba.ca)  
**Website:** [www.umanitoba.ca/stpauls](http://www.umanitoba.ca/stpauls)  
**Student Council Office:** (204) 474-9262

#### University College

General Office  
[203-220 Dysart Road, Winnipeg MB R3T 2M8](http://203-220DysartRoad,WinnipegMBR3T2M8)  
**Telephone:** (204) 474 9751  
**Fax:** (204) 261-0021  
**Email:** [ucsecc@cc.manitoba.ca](mailto:ucsecc@cc.manitoba.ca)  
**Website:** [www.umanitoba.ca/colleges/uc/](http://www.umanitoba.ca/colleges/uc/)

#### Universitairé de Saint Boniface

General Office  
200 Cathedrale Avenue, Winnipeg, MB R2H 0H7  
**Registrar's Office Telephone:** (204) 235-4408  
**Email:** [registrar@ustboniface.mb.ca](mailto:registrar@ustboniface.mb.ca)  
**Website:** [www.cusb.ca](http://www.cusb.ca)

### Counselling and Career Centre



**Fort Garry Campus:** 474 University Centre  
**Telephone:** (204) 474 8592  
**Bannatyne Campus:** S207 Medical Services Building  
**Telephone:** (204) 789 3857  
**Website:** [umanitoba.ca/student/counselling](http://umanitoba.ca/student/counselling)

individual counselling, group programs, crisis management, consultation and assessment

- career planning and counselling
- career mentor program
- employment advising
- job postings
- support for students intending to/or already participating in co-op education/internship programs

### **Digital Copy Centre**

118 University Centre

**Fax:** (204)261-9384

- offers high speed, high quality printing and photocopying, as well as a wide range of finishing services
- lowest printing costs on campus
- self-serve copiers and printers are available 24 hours daily

### **Disability Services**

520 University Centre

**Telephone:** (204) 474 9251 **Fax:** (204) 275 8098

**TTY:** (204) 474 6269

**Email:** [disability\\_services@umanitoba.ca](mailto:disability_services@umanitoba.ca)

**Website:** [umanitoba.ca/student/resource/disability\\_services](http://umanitoba.ca/student/resource/disability_services)

- provides support and advocacy for students with disabilities of all kinds: hearing, learning, injury-related, mental health, medical, physical or visual.
- on-campus, in-class and test/exam accommodations
- on campus transportation, American Sign Language/English interpretation, note-takers, extended time for tests/exams and email notification to instructors about accommodations

### **English Language Centre**

520 University Centre

**Telephone:** (204) 474 9251

**Fax:** (204) 275-8098

**Email:** [elc@umanitoba.ca](mailto:elc@umanitoba.ca)

**Website:** [umanitoba.ca/elc](http://umanitoba.ca/elc)

- English Language Instruction for International Students

### **Financial Aid and Awards**

422 University Centre

**Telephone:** (204) 474 9531 **Fax:** (204) 474 7543

**E-mail:** [awards@umanitoba.ca](mailto:awards@umanitoba.ca)

**Website:** [umanitoba.ca/student/fin\\_awards](http://umanitoba.ca/student/fin_awards)

- information about scholarships, bursaries, prizes
- student aid

- emergency loans
- the food bank

**Food Services**

207 Pembina Hall  
**Telephone:** (204) 474 9916 **Fax:** (204) 474 7538

- operated by ARAMARK Canada
- cafeterias, canteens and national branded franchises are located throughout the Fort Garry and Bannatyne Campuses

**Health Service**

104 University Centre  
**Telephone:** (204) 474 8411; **Fax:** (204) 474 7573  
**Website:** [umanitoba.ca/student/health](http://umanitoba.ca/student/health)

- accessible by all currently registered University of Manitoba students
- physicians and a visiting consultant psychiatrist
- an after hours on-call telephone service for urgent matters
- an on-site laboratory
- travel health advice and required immunizations

**Homestay Program**

520 University Centre  
**Telephone:** (204) 474-6809 or (204) 474-8701  
**Website:** <http://umanitoba.ca/student/elc/homestay/>

an opportunity for a visiting international student to live in a Canadian home while studying at our university (See also [International Centre for Students](#) )

**Housing and Student Life**



**Residence (On-Campus Accommodation)**

101 Arthur V. Mauro Residence  
**Telephone:** (204)474-9922 or **Toll Free:** 1-800-859-8737  
**Fax:** (204) 474-7662  
**Email:** [residence@umanitoba.ca](mailto:residence@umanitoba.ca)  
**Website:** [umanitoba.ca/student/housing/](http://umanitoba.ca/student/housing/)

six residences on the University's Fort Garry provide accommodation for 1260 students



**Lists of off-campus accommodations are maintained at UMSU Living**

108A University Centre

Phone: (204) 474-9717

Website: [umanitoba.ca/campus/housing/offcampus/index.html](http://umanitoba.ca/campus/housing/offcampus/index.html)

**Summer Accommodation**

Telephone: (204) 480-1415

Fax: (204) 474-7662

Website: [umanitoba.ca/campus/housing/guests/index.html](http://umanitoba.ca/campus/housing/guests/index.html)

Rooms can be leased for the Summer –early May to mid-August

**Office of Student Life**

Telephone: (204) 474-6637

Email: [student\\_life@umanitoba.ca](mailto:student_life@umanitoba.ca)

Website: [umanitoba.ca/student/housing/studentlife](http://umanitoba.ca/student/housing/studentlife)

- ongoing training and development of student leaders in the campus and residence community
- Parents Orientation
- Service Study Tours

**International Centre for Students (ICS)**

541 University Centre

Telephone: (204) 474 8501 Fax: (204) 474 7562

Website: [umanitoba.ca/student/ics](http://umanitoba.ca/student/ics)

- facilitates international learning experiences
- supports international students
- facilitates student exchanges and internships
- delivers cross-cultural programs
- student exchange programs
- World W.I.S.E. Resource Centre (Work, Internship, Study, Exchange)
- social and recreational events
- ICS Lounge: The ICS Lounge and outdoor patio
- Student Advocacy and Resource Services

(See also [Homestay Program](#))

**Libraries**

**General Office**

Libraries – Director's Office, 156 Elizabeth Dafoe Library

Telephone: (204) 474 9881

Recorded hours for all Libraries: 474 9770

Website: <http://umanitoba.ca/libraries/umanitoba.ca/libraries/>

E-mail: [karen\\_adams@umanitoba.ca](mailto:karen_adams@umanitoba.ca)

- Online catalogue, called BISON
- Document delivery
- Photocopying facilities
- Laser printing

**Locations:**

**Albert D. Cohen Library (Management)**

208 Drake Centre; Phone: (204) 474 8440



**Architecture and Fine Arts Library**

John A. Russell Building; Phone: (204) 474 9216

**Archives & Special Collections**

331 Dafoe Library; telephone: (204) 474 9986

**Carolyn Sifton-Helene Fuld Library**

409 Taché Avenue; telephone (204) 237 2807

**Concordia Hospital Library**

Room 308, 1095 Concordia Ave., R2K 3S8; telephone (204) 661 7163

**Donald W. Craik Engineering Library**

351 Engineering Building; telephone: (204) 474 6360

**Elizabeth Dafoe Library**

25 Chancellors Circle, telephone: (204) 474 9544

**E.K. Williams Law Library**

401 Robson Hall; telephone: (204) 474 9995

**Eckhardt-Gramatté Music Library**

223/4 Music Building; telephone (204) 474 9567

**Father Harold Drake Library**

119 St. Paul's College; telephone: (204) 474 8585

**Bill Larson Library (Grace General Hospital)**

300 Booth Drive, R3J 3M7; telephone (204) 837 0127

**J.W. Crane Memorial Library**

Deer Lodge Centre, 2109 Portage Ave., R3J 0L3; telephone (204) 831 2107

**Misericordia Health Centre Library**

99 Cornish Ave., R3C 1A2; telephone (204) 788 8109

**Neil John Maclean Health Sciences Library**

Brodie Centre, Bannatyne Campus; telephone: (204) 789 3464

**Ombudsman**

406 University Centre

**Telephone:** (204) 474 8439 **Fax:** (204) 474 7526

**Email:** [Evelyn\\_Bernstein@umanitoba.ca](mailto:Evelyn_Bernstein@umanitoba.ca)

**Website:** [umanitoba.ca/staff/ombudsman](http://umanitoba.ca/staff/ombudsman)

- the Ombudsman is a designated neutral person who provides confidential and informal assistance for resolving university-related concerns
- independent of the University's formal administrative structure
- has power to investigate and make recommendations to resolve problems and improve University policies and procedures

**Parking Services**

Welcome Centre, 423 University Crescent

**Telephone:** (204) 474 9483

**Fax:** (204) 474-7658

**Website:** [umanitoba.ca/parking](http://umanitoba.ca/parking)

- 3400 parking spaces are available for purchase by students
- parkade, meters, pay and display and ticket-dispenser areas supply an additional 1,600 spaces
- Motorcycles are accommodated in two convenient locations.



- Commuter and Resident parking permits can be purchased online by credit card
- Fort Garry Campus wide Shuttle service available from September to April

### ***Peers: Students Helping Students***

150 University Centre  
**Telephone:** (204) 474 6696 **Fax:** (204) 269 1299  
**E-mail:** [peer@umsu.ca](mailto:peer@umsu.ca)

**Website:** [umanitoba.ca/student/peers](http://umanitoba.ca/student/peers)

- provides support to fellow students on any academic, health or personal concern.

### ***PlayCare Centre***

109 University College  
**Telephone:** (204) 474 6949 **Fax:** (204) 261 0021  
**Email:** [childsm@cc.umanitoba.ca](mailto:childsm@cc.umanitoba.ca)

**Website:** [umanitoba.ca/student/resource/playcare](http://umanitoba.ca/student/resource/playcare)

- licensed as a full-time daycare for children between 2 and 5 years of age and for ages 6-12 on school in-service days

### ***Recreation Services***

145 Frank Kennedy Centre  
**Telephone:** (204) 474 6100 **Fax:** (204) 474 7503  
**Websites:** [www.bisonactiveliving.ca](http://www.bisonactiveliving.ca) OR [www.bisonactiveliving.ca](http://www.bisonactiveliving.ca)

- wide variety of recreation facilities Intramurals and Sports Clubs
- Intramural sports
- adult recreation instructional programs
- fitness assessment, counselling, programming and fitness leadership development
- children's camps

### ***Registrar's Office***

400 University Centre  
**Telephone:** (204) 474 9420 **Toll Free North America** (877) 474 9420  
**Fax:** (204) 275 2589

**Website:** [umanitoba.ca/registrar](http://umanitoba.ca/registrar)

- registration information
- address and name changes
- application and information for graduation
- application for Letters of Permission
- Convocation ceremonies
- fee assessment (charges and refunds), and fee appeals
- examinations fee appeals
- final grade reporting
- graduation parchment replacement
- international student health insurance,
- student photo ID cards
- transcripts
- T2202A education tax forms.

### ***Sports (Bison Sports)***

**Telephone:** (204) 474 9611 or (204) 474 9234  
**Address:** 124 Frank Kennedy Physical Education Centre.



Website: [www.gobisons.ca](http://www.gobisons.ca)

- member of Canada West Universities Athletic Association
- regional association within Canadian Interuniversity Sport (CIS).
- Bison teams include basketball, football, golf, cross country, hockey, soccer, swimming, track and field, and volleyball

### ***Student Advocacy***

519 University Centre

Telephone: (204) 474 7423

Fax: (204) 474 7567

Email: [student\\_advocacy@umanitoba.ca](mailto:student_advocacy@umanitoba.ca)

Website: [umanitoba.ca/student/advocacy](http://umanitoba.ca/student/advocacy)

- assists students in the resolution of conflicts arising from actions or decisions taken by the University.
- offers workshops and orientations to students, staff and faculty
- resources on academic dishonesty, incivility, final grade appeal, term work grade appeal, student conduct

### ***University of Manitoba Students' Union (UMSU)***

101 University Centre

Telephone: (204) 474-6822

Fax: (204) 269-1299

Email: [umsu@umsu.ca](mailto:umsu@umsu.ca)

Website: [umsu.ca](http://umsu.ca)

- The university-wide representative body for undergraduate students at the University of Manitoba
- Advocates on behalf of students to University administration and to all levels of government
- Organizes many informational and entertaining student-focused events throughout the year
- Offers a collection of services to help students save money and enhance their campus experience
- UMSU is Local 103 of the Canadian Federation of Students (CFS), a provincial and national organization that provides representation and cost-saving services for its members.

### ***Rainbow Pride Mosaic (RPM)***

195 Helen Glass Centre

Telephone: 204-474-7439

Email: [rpm@umsu.ca](mailto:rpm@umsu.ca)

Web: [rpm.umsu.ca](http://rpm.umsu.ca)

### ***Womyn's Centre***

190 Helen Glass Centre

Telephone: 204-474-6897

Email: [uofm\\_womyn@hotmail.com](mailto:uofm_womyn@hotmail.com)

Website: [womynscentre.umsu.ca](http://womynscentre.umsu.ca)



**University of Manitoba Archived Calendars**

Please see website for University of Manitoba archived calendars.