

Senate
Senate Chamber
Room E3-262 Engineering Building
WEDNESDAY, September 4, 2013
1:30 p.m.

A G E N D A

I MATTERS TO BE CONSIDERED IN CLOSED SESSION

1. Report of the Senate Committee on Honorary Degrees

This report will be distributed to members of Senate at the meeting.
Documentation will be available for examination by eligible members of Senate
the day preceding the Senate meeting.

II MATTERS RECOMMENDED FOR CONCURRENCE WITHOUT DEBATE

- | | | |
|----|---|--------|
| 1. | <u>Report of the Executive Committee of the Faculty of
Graduate Studies on Course and Curriculum Changes
RE: Department of Civil Engineering [May 29, 2013]</u> | Page 3 |
| 2. | <u>Report of the Executive Committee of the Faculty of
Graduate Studies on Course and Curriculum Changes
RE: Departments of Accounting and Finance, Physiology,
and Microbiology [June 28, 2013]</u> | Page 5 |
| 3. | <u>Proposal from Extended Education Division for a Post-
Baccalaureate Certificate in Aerospace Program Management</u> | Page 9 |

III MATTERS FORWARDED FOR INFORMATION

- | | | |
|----|--|----------|
| 1. | <u>Report of the Senate Committee on Awards
Part A - June 20, 2013</u> | Page 79 |
| 2. | <u>Report of the Senate Committee on Awards
Part A -August 7, 2013</u> | Page 91 |
| 3. | <u>Report of the Implementation Working Group
for the Cooper Commission Report [August 1, 2013]</u> | Page 95 |
| | <u>(a) Developing Essential Skills and Abilities Requirements
for Programs Subject to External Accreditation</u> | Page 97 |
| | <u>(b) Developing <i>Bona Fide</i> Academic Requirements
for Programs not Subject to External Accreditation</u> | Page 104 |
| 4. | <u><i>In Memoriam: Dr. Norman Frohlich</i></u> | Page 112 |
| 5. | <u><i>In Memoriam: Dr. Elizabeth Feniak</i></u> | Page 113 |

6.	<u>In Memoriam: Dr. Dana Stewart</u>	Page 114
7.	<u>Items Approved by the Board of Governors, on June 25, 2013</u>	Page 115
IV	<u>REPORT OF THE PRESIDENT</u>	Page 117
V	<u>QUESTION PERIOD</u>	
	Senators are reminded that questions shall normally be submitted in writing to the University Secretary no later than 10:00 a.m. of the day preceding the meeting.	
VI	<u>CONSIDERATION OF THE MINUTES OF THE MEETING OF JUNE 19, 2013</u>	
VII	<u>BUSINESS ARISING FROM THE MINUTES</u>	
	1. <u>Responsible Conduct of Research – Investigation Procedures</u>	
VIII	<u>REPORTS OF THE SENATE EXECUTIVE COMMITTEE AND THE SENATE PLANNING AND PRIORITIES COMMITTEE</u>	
	1. <u>Report of the Senate Executive Committee</u>	Page 130
	2. <u>Report of the Senate Planning and Priorities Committee</u>	
	The Chair will make an oral report of the Committee's activities.	
IX	<u>REPORTS OF OTHER COMMITTEES OF SENATE, FACULTY AND SCHOOL COUNCILS</u>	
	1. <u>Report of the Senate Committee on Awards Part B - June 20, 2013</u>	Page 133
	2. <u>Report of the Senate Committee on Awards Part B -August 7, 2013</u>	Page 137
	3. <u>Report of the Senate Committee on Nominations [August 1, 2013]</u>	Page 145
	4. <u>Report of the Senate Committee on Academic Dress</u>	Page 146
X	<u>ADJOURNMENT</u>	

Please call regrets to 474-6892 or send to shannon.coyston@umanitoba.ca.

Report of the Executive Committee of the Faculty of Graduate Studies on Course and Curriculum Changes

Preamble

1. The Faculty of Graduate Studies has responsibility for all matters relating to the submission of graduate course, curriculum and program changes. Recommendations for new programs or changes are submitted by the Faculty Council of Graduate Studies for the approval of Senate.
2. In October 2007, the Faculty of Graduate Studies approved a process of *Streamlining Course Introductions, Modifications, & Deletions* which allows the Executive Committee to approve these changes in lieu of Faculty Council when the courses are not associated with a new program or program changes.
3. The Faculty of Graduate Studies Executive Committee voted via email prior to the above date to consider course change proposals from the Dept. of Civil Engineering, Faculty of Engineering.

Observations

1. The **Dept. of Civil Engineering** proposes the introduction of two (2) courses to fulfill the needs and demands of the construction engineering and management area of the grad programs in Civil Engineering.

Dept. of Civil Engineering

Course Introductions

CIVL 7370 Advanced Construction Management

3

Strategic management of construction organizations; strategy systems and processes; health and safety management; human resources management; benchmarking; financing; budgeting; value management and financial performance; and quantitative decision-making for construction organizations.

CIVL 7380 Sustainability in Construction

3

Introduction and overview of sustainable construction and green buildings; green building

assessment tools; the green building process; green building design, construction and commissioning; the economics of green buildings and future directions in sustainable construction and green buildings.

NET CREDIT HOUR CHANGE

+6

Recommendations

The Executive Committee recommends THAT: the course changes from the unit listed below be approved by Senate:

Dept. of Civil Engineering

Respectfully submitted,

Dr. John (Jay) Doering, Chair
Faculty of Graduate Studies Executive Committee

/ak

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses the report to Senate.

Report of the Executive Committee of the Faculty of Graduate Studies on Course and Curriculum Changes

Preamble

1. The Faculty of Graduate Studies has responsibility for all matters relating to the submission of graduate course, curriculum and program changes. Recommendations for new programs or changes are submitted by the Faculty Council of Graduate Studies for the approval of Senate.
2. In October 2007, the Faculty of Graduate Studies approved a process of *Streamlining Course Introductions, Modifications, & Deletions* which allows the Executive Committee to approve these changes in lieu of Faculty Council when the courses are not associated with a new program or program changes.
3. The Faculty of Graduate Studies Executive Committee met on the above date to consider course change proposals from the Depts. of Accounting & Finance, Physiology, and Microbiology.

Observations

1. The **Dept. of Accounting & Finance** proposes the deletion of two (2) courses and introduction of two (2) courses to change the name and description of the deletions (and introduce them as course introductions) in order to more clearly define what is already being taught. The Head of the Dept. of Economics, Dr. Pinaki Bose, provided a letter of support for the introductions of the two courses and indicated there is no significant overlap with any of the graduate courses in the Dept. of Economics. Dr. Bose added that there would be interest in cross-listing the courses.

Dept. of Accounting & Finance

Course Deletions

FIN 7500 Financial Theory and Corporate Policy

3

FIN 7510 Finance 1: Capital Markets

3

Course introduction

FIN 7100 Financial Economics

3

Course provides Ph.D. students with a broad theoretical understanding of financial economics required for advanced study of theoretical finance. It covers a variety of topics and discusses the application in different areas of finance. Good knowledge of microeconomics, probability and statistics, and calculus is required. Prerequisite: admission to the Ph.D. program in Management (Finance) or approval by instructor. Not to be held with FIN 7500 (formerly 009.750).

FIN 7110 Asset Pricing

3

Critical evaluation of latest empirical research in finance with focus on equity and bond markets. Tests of intertemporal, multifactor, conditional, and unconditional asset pricing models. Special emphasis on developing econometric skills for the analysis of financial data. Prerequisite: admission to the Ph.D. program in Management (Finance) or approval by instructor. Not to be held with FIN 7510 (formerly 009.751).

NET CREDIT HOUR CHANGE

0

2. The **Dept. of Physiology** proposes the deletion of two courses and the introduction of four courses to split the two 3 credit hour courses into four 1.5 credit hour courses. These courses together cover the previous material but importantly change the driver from understanding current knowledge of human physiology, to an appreciation of human physiology in the context of understanding disease or pathophysiological states, available therapeutic approaches and current areas of research. The splitting of the courses addresses issues of time to completion and was a recommendation in Physiology's recent Graduate Program Review. No additional resources are required.

Dept. of Physiology

Course Deletions

PHGY 7242 Medical Physiology Part A

3

PHGY 7244 Medical Physiology Part B

Course introduction

PHGY 7252 Respiratory Physiology & Pathophysiology

1.5

Lecture, readings, and student-directed discussion course dealing with fundamental biophysical processes and function of major respiratory organ systems (including membrane transport and muscle contraction in respiratory physiology), illustrated with pathophysiological structures and function, and their relationship to disease. The course will also examine current therapeutic approaches and active areas of research interest.

PHGY 7254 Cardiovascular Physiology & Pathophysiology

1.5

Lecture, readings, and student-directed discussion course dealing with fundamental biophysical processes and function of major cardiovascular organ systems, illustrated with pathophysiological structures and function, and their relationship to disease. The course will also examine current therapeutic approaches and active areas of research interest.

PHGY 7256 Endocrine Physiology & Pathophysiology

1.5

Lecture, readings, and student-directed discussion course dealing with fundamental biophysical processes and function of major endocrine (including reproductive) organ systems, illustrated with pathophysiological structures and function, and their relationship to disease. The course will also examine current therapeutic approaches and active areas of research interest.

PHGY 7258 Neurophysiology & Pathophysiology

1.5

Lecture, readings, and student-directed discussion course dealing with fundamental biophysical processes and function of major neurophysiology organ systems, illustrated with pathophysiological structures and function, and their relationship to disease. The course will also examine current therapeutic approaches and active areas of research interest.

NET CREDIT HOUR CHANGE

0

3. The **Dept. of Microbiology** proposes five deletions concerning courses that have not been offered in some years. These courses were subsequently replaced by MBIO 7040, 7050, 7060 and 7200.

Dept. of Microbiology

Course Deletions

MBIO 7080 Biochemical Mechanisms	3
MBIO 7110 Advances in Microbial Genetics	3
MBIO 7130 Advanced Physiology of Bacteria	3
MBIO 7170 Current Topics in Mammalian Cell Culture	3
MBIO 7190 Microbial Ecology	3
<u>NET CREDIT HOUR CHANGE</u>	<u>-15</u>

Recommendations

The Executive Committee recommends THAT: the course changes from the units listed below be approved by Senate:

Dept. of Accounting & Finance

Dept. of Physiology

Dept. of Microbiology

Respectfully submitted,

Dr. John (Jay) Doering, Chair
Faculty of Graduate Studies Executive Committee

Comments of the Senate Executive Committee:

The Senate Executive Committee endorses the report to Senate.

/ak

Certificate Proposal Submitted to Senate for Concurrence without Debate

Proposed Certificate Name: Post-Baccalaureate Certificate in Aerospace Program Management

Proposal Submitted by: Extended Education Council

Purpose of Certificate Program:

The Post-Baccalaureate Certificate in Aerospace Program Management is an advanced credential in aerospace program management. Aerospace program management involves overseeing the full life-cycle of an aerospace system—from initial identification of system requirements; to the design, manufacturing and marketing of the system; to the system’s ongoing employment and maintenance. The Post-Baccalaureate Certificate in Aerospace Program Management is focused on providing current and future project, production and operational managers, design engineers, and procurement and logistics specialists with the advanced knowledge, understanding and skills needed to assume program management positions. It is ideally suited for individuals who already have aerospace manufacturing and/or operational experience, but can be used as a bridge into the aerospace industry for those from other backgrounds. The Post-Baccalaureate Certificate in Aerospace Program Management is envisioned to readily allow students to pursue their professional designation in program management, as offered by the US-based Project Management Institute (PMI). PMI is the worldwide certification body for project management and has recently ventured into certifying program management as well. It is considered essential, and has been designed accordingly, that the PAPM be as a minimum aligned with PMI’s certification standards.

Certificate Program Objectives:

The program’s objectives are to provide the following:

1. A clear understanding of the key factors in building and operating today’s aerospace systems;
2. The essential managerial skills and mindset for undertaking a complex aerospace development;
3. An opportunity to exercise those skills through an actual project or a critical review of a past aerospace development; and
4. The necessary understanding to pursue the Project Management Institute’s project and/or program management certifications.

Program Overview:

The Post-Baccalaureate Certificate in Aerospace Program Management is composed of six courses and one three-day workshop for a total of 246 contact hours. Five of these courses are “required”. Of these five required courses, three are credit courses, two 3 credit hour courses and one 4 credit hour courses (equivalent to 120 contact hours) drawing from the faculties of Arts, Engineering and Management. The remaining two required courses along with one elective course and a three-day workshop (equivalent to 126 contact hours) are non-degree credit courses offered by Continuing Education within Extended Education.

Comments of the Senate Executive Committee:

The Senate Executive Committee endorses the report to Senate.

The Program will consist of the following required courses offered by UM:

- EXT ED XXXXX Aerospace Systems Analysis
- POLS 4160 Selected Topics 3: Aerospace Industry Structure and Government Regulation
- OPM 4620 Production Management Seminar (Aerospace Product Life-Cycle Management)
- MECH 4330 Contemporary Topics in Manufacturing Engineering 1: Aerospace Program Management and System Engineering Working with Families
- EXT ED 38001 Applied Project: Capstone Course
- One of the following Extended Education courses;
 - 98834 Intro to Operations Management,
 - 98832 Intro to Logistics,
 - 98831 Intro to Procurement,
 - 98833 Intro to Transportation,
 - 98751 Supply Chain Management,
 - 26001 Quality Assurance Planning,
 - 26002 Quality Improvement: Principle, and Procedures,
 - 25001 Introduction to Marketing,
 - New Aerospace Selected Topics, or
- An approved industry or other academic offerings; approval will be subject to course relevance and rigor, and will be provided on a case-by-case basis.

Number of contact hours: 246 contact hours

Number of core courses: Six plus one three-day workshop.

Expected time for program completion: 10 – 36 months.

Will at Least 50% of instructional contact hours be delivered by the U of M? Yes

Have IST and Libraries been consulted? Yes.

List of Participants and Constituents consulted:

Conferences, General Meetings, Group Meetings

Meeting with CF School of Aerospace Studies Commandant and Staff, Winnipeg, 2 October 2012

Attendance Manitoba Aerospace Association Annual Meeting, Winnipeg, 3 October 2012

Meeting with Manitoba Aerospace Human Resource Council, Winnipeg, 9 November 2012

Meeting with Manitoba Industry Representatives on PAPM proposal, Winnipeg, 27 November 2012

Attendance 2012 Canadian Aerospace Summit, Ottawa, 5-6 December 2012

Attendance Manitoba Aerospace Workshop: Technology Priorities, Economic Development and The Emerson Aerospace Review, Winnipeg, 16-17 January 2013

Meeting with PAPM key stakeholders, Winnipeg, 28 February 2013

Western Aerospace Expo Conference, Winnipeg, 6-9 May 2013

Individual Consultations

Internal

Dr. James Blatz, Associate VP Partnerships
Dr. George McLead, Associate Dean, FGS
Dr. Robert Hoppa, Associate Dean, Arts
Dr. Steve Lecce, Head, Political Studies, Arts
Dr. Andrea Rounce, MPA Program Director, Arts
Dr. Beddoes, Dean, Engineering
Dr. Doug Ruth, Associate Dean, Engineering
Dr. David Kuhn, Dept Head, Mechanical and Manufacturing Engineering
Ms. Kathryn Atamanchuk, Engineer-in-Residence (Standard Aero Secondment)
Dr. Tarek ElMekkawy, Associate Professor, Mechanical and Manufacturing Engineering
Dr. Michael Benarroch, Dean, Asper School of Business
Dr. Ron McLachlin, Head, Supply Chain Management

External

Mr. Ken Webb, Executive Director, Manitoba Aerospace
Mr. Wendell Wiebe, Executive Director, Manitoba Aerospace Human Resource Council
Mr. Robert Manson, Project Manager—Aerospace, Manitoba Government
Ms. Donna Roberecki, Project Manager, Entrepreneurship, Training and Trade
Mr. Brent DePape, Senior Policy Analyst, Western Economic Diversification Canada
Mr. Rick Jensen, Director, Program Management, Boeing Canada
Mr. Kim Olson, Senior VP, Standard Aero
Ms. Florence Ticzon, Senior Manager, Human Resources Standard Aero
Mr. John Leroux, Director, Technical Training and Development, Standard Aero
Mr. Don Boitson, VP and GM, Magellan Aerospace
Mr. Dave O'Connor, Director, Marketing and Space, Magellan,
Mr. Walter Czynryj, Director Quality and Engineering, Magellan
Mr. Geoffrey Languedoc, Executive Director, Canadian Aeronautics and Space Institute
Colonel Blaise Frawley, Commander, 17 Wing
Lieutenant-Colonel Brad Baker, Commandant, CF School of Aerospace Studies
Major Brian Statham, ASC Course Director, CF School of Aerospace Studies
Mr. Jeff Paul, Senior Instructor, CF School of Aerospace Studies
Major Vern Greenway, Air Training, 1 Canadian Air Division
Major Rob Morrow, Directorate Air Personnel Strategy, National Defence Headquarters

Will this certificate program operate on a cost recovery basis? Yes

Date of Council approval: June 26, 2013



UNIVERSITY
OF MANITOBA

**FORMAL PROPOSAL:
POST-BACCALAUREATE CERTIFICATE IN AEROSPACE PROGRAM MANAGEMENT**

Submission To: Faculty Council, Extended Education

Submission From: Continuing Education

Date: 10 July, 2013

Reference:

- Collaborative Formative Review Report: , Extended Education, April 17th, 2013
- Letter of Intent: Post Baccalaureate Certificate in Aerospace Systems Management, Extended Education, October, 2012
- Aerospace Research and Education Cluster Proposal (AREC), Faculty of Graduate Studies, May 2012;
- Extended Education Non-Degree Proposal Procedures and Guidelines, Approved April 28, 2010
- U of M Non-Degree Programs Taxonomy

EXECUTIVE SUMMARY

Responding to a long-established local industry need and growing opportunity, and leveraging the University's recent partnership with the Royal Canadian Air Force, this document proposes the creation of a **Post-Baccalaureate Certificate in Aerospace Program Management** (PAPM).

PAPM Description. The PAPM is an advanced credential in aerospace program management. Aerospace program management involves overseeing the full life-cycle of an aerospace system—from initial identification of system requirements; to the design, manufacturing and marketing of the system; to the system's ongoing employment and maintenance. The PAPM is focused on providing current and future project, production and operational managers, design engineers, and procurement and logistics specialists with the advanced knowledge, understanding and skills needed to assume program management positions. It is ideally suited for individuals who already have aerospace manufacturing and/or operational experience, but can be used as a bridge into the aerospace industry for those from other backgrounds. The program's objectives are to provide the following:

- A clear understanding of the key factors in building and operating today's aerospace systems;
- The essential managerial skills and mindset for undertaking a complex aerospace development;
- An opportunity to exercise those skills through an actual project or a critical review of a past aerospace development; and
- The necessary understanding to pursue the Project Management Institute's project and/or program management certifications.

The PAPM is composed of six courses and one three-day workshop for 246 contact hours. Five courses are "required" of which three are credit courses (120 hours) from three different Departments and Faculties across the campus. The other two required courses as well as a sixth elective course and a three-day workshop (126 hours) are non-credit courses provided by Continuing Education

PAPM Market. The proposed program is envisioned to target and serve younger aerospace managers/professionals (ages 25-35) in the aerospace manufacturing industry that require advanced education in aerospace development and program management, as well as deeper understanding of the aerospace industry at large. Beyond the professional aerospace manufacturing market, it is also envisioned to serve three secondary professional markets—the Air Force, the Air Transportation Industry and, finally, the aerospace public sector market made up of aerospace affiliated departments and agencies. The Needs Assessment has verified that:

- A unique and pressing aerospace program management need does exist;
- A sizable local and national market and interest does exist (see Table below); and
- No direct competition in Canada currently exists.

MARKET GROUP	MANITOBA MARKET SIZE (Classroom Delivery Option)	NATIONAL MARKET SIZE (Online Delivery Option)
Manufacturing	200	4,000
RCAF	200	1,000
Air Transport Industry	125	1500
Related Public Service	25	250
Total	550	6750

PAPM Delivery. The program is designed to be completed in as little as ten months, or be carried out over a maximum of three years, depending on student needs. Initially, the program is to be delivered in a classroom environment in and around the Winnipeg Airport, employing a variety of teaching tools, including case studies, exercises, seminar discussions, lectures, guest speakers and company visits. However, once locally established, it is envisioned that the program will be offered online to the much larger national market.

PAPM Collaboration. PAPM is an ambitious interdisciplinary initiative across four departments (Mechanical and Manufacturing Engineer, Supply Chain Management and Political Studies) and their associated faculties. Resulting from the industry specific and interdisciplinary nature of the PAPM, the program content does not, in large part, straightforwardly draw upon one existing campus expertise and coursing. However, the needed generic engineering, management and policy curriculum expertise do exist on campus while the needed specific aerospace understandings do exist locally within Winnipeg's aerospace communities. PAPM promises to bring together and harness the currently dispersed local aerospace intellect for the purpose of addressing a recognized local and national industry need and want.

TABLE OF CONTENTS

Executive Summary	2
Table of Contents	4
Part One: Introduction	5
Part Two: Needs Assessment	8
Part Three: Design and Delivery	19
Part Four: Transfer Credit Arrangements	23
Part Five: Resources	24
Part Six: Advisory/Program Committee	26
Part Seven: Student Evaluation	27
Part Eight: Course and Program Evaluation	28
Part Nine: Financial Plan	29
Part Ten: Marketing Plan	32
Appendix A: Consulted Sources	34
Appendix B: Existing Canadian Aerospace Degree Programs	37
Appendix C: Notional Course Outline: Ext Ed XXXXX	40
Appendix D: Notional Course Outline: POLS 4160	42
Appendix E: Notional Course Outline: OPM 4620	44
Appendix F: Notional Course Outline: MECH 4330	46
Appendix G: 2013-14 Teaching Team	48
Appendix H: Five-Year Budget Projection	50
Appendix I: Letter of Intent	52
Appendix J: Letters of Support	56

PART ONE: INTRODUCTION

1.1 Program Proposal Title: Post-Baccalaureate Certificate in Aerospace Program Management (PAPM)

1.2 Program Proposal:

- **1.2.1 Program Developer:** Stephen James, Executive Coordinator, Aerospace Programs, Faculty of Graduate Studies (204-474-6400; Steve.James@ad.umanitoba.ca);
- **1.2.2 Program Sponsor:** Dennis Silverstrone, Director, Continuing Education (204-480-1022; silvestroned@extended.umanitoba.ca); and
- **1.2.3 Managing Organization:** Department of Continuing Education (Extended Education)

1.3 Credential Type: Post-Baccalaureate Certificate as detailed in the University of Manitoba Non-Degree Taxonomy

1.4 Credential Status: The PAPM is a new program.

1.5 Program Description. The PAPM is an advanced credential in aerospace program management. Aerospace program management involves overseeing the full life-cycle of an aerospace system—from initial identification of system requirements; to the design, manufacturing and marketing of the system; to the system’s ongoing employment and maintenance. The PAPM is focused on providing current and future project, production and operational managers, design engineers, and procurement and logistics specialists with the advanced knowledge, understanding and skills needed to assume program management positions. It is ideally suited for individuals who already have aerospace manufacturing and/or operational experience, but can be used as a bridge into the aerospace industry for those from other backgrounds.

1.6 Partnering Organizations and Stakeholders. The PAPM is composed of six courses and one three-day workshop for 246 contact hours. Five courses are “required” of which three are credit courses (120 hours) from three different Departments and Faculties across the campus. The other two required courses as well as a sixth elective course and a three-day (18-hour) workshop are non-credit courses provided by Continuing Education (126 hours).

- **1.6.1 Credit Course Providers.** The credit course providers are responsible for the course content and quality through both curriculum selection and teaching staff oversight and authority. The providers and courses are:

- Department of Mechanical and Manufacturing Engineering, Faculty of Engineering (Contact Person: Dr. David Kuhn, Department Head, 204-474-9803) and MECH 4330 Aerospace Program Management and Systems Engineering (Aerospace)
- Department of Political Studies, Faculty of Arts (Contact Person: Dr. Andrea Rounce, MPA Program Chair, 204-474-8546) and POLS 4160 Selected Topics In Politics: Aerospace Industry Structure and Government Regulation Analysis
- Department of Supply Chain Management, Asper School of Business (Contact Person: Dr. Ron McLachlin, Department Head, 204-474-9431) and OPM 4620 Production Management Seminar in Aerospace Life-cycle Management.
- **1.6.2 Continuing Education Responsibilities.** Continuing Education is responsible for the overall marketing and administration of the program including the administration of all revenues and costs. All teaching costs will be administered by Continuing Education, regardless if related to the credit or non-credit courses. Further, Continuing Studies is responsible for the content and quality of all the non-credit program offerings;
- **1.6.3 Surplus Revenues.** While the program is envisioned to consume all revenues in its first three years to cover operating costs and growth needs, profits (net of direct and indirect costs of operating the program) thereafter are to be shared equitably between the partnering departments/faculties based on their respective levels of program contribution;
- **1.6.3 Research Stakeholders.** Beyond direct partners, two other campus stakeholders are interested in PAPM implementation for its potential to strengthen University-industry relations and encourage follow-on aerospace research initiatives:
 - Faculty of Graduate Studies (Dr. George MacLean, Associate Dean, 204-474-6621)
 - Office of Vice President—Research and International (Contact Person: Dr. James Blatz, Associate Vice-President (Partnerships), 204-474-9568)
- **1.6.4 Industry Stakeholders.** Beyond the campus, PAPM, as an industry-focused credential, needs to be attentive, and where possible, responsive to the ongoing needs and interests of the following local organizations/associations:
 - Canadian Forces School of Aerospace Studies, 17 Wing (Contact Person: Lieutenant-Colonel Brad Baker, Commandant, 204-833-2500 ext 6395)
 - Manitoba Aerospace Association (Contact Person Mr. Ken Webb, Executive Director, 204-799-7660);

- Manitoba Aerospace Human Resources Council (Contact Person: Mr. Wendell Wiebe, Executive Director & GM, 204-272-2952)
- School of Transportation, Aviation and Manufacturing, Red River College (Contact Person: Don MacDonald, Dean, 204-632-3990)
- Manitoba Entrepreneurship, Training and Trade (Contact Person: Mr. Bob Manson, Senior Project Manager (Aerospace), 204-945-8741)
- Yes! Winnipeg (Contact Person: Mr. Jon Mead, Business Development-Aerospace, 204-954-1974)
- **1.6.4 Program Management Certification.** PAPM is envisioned to readily allow students to pursue their professional designation in program management, as offered by the US-based **Project Management Institute** (PMI). PMI is the worldwide certification body for project management and has recently ventured into certifying program management as well. It is considered essential, and has been designed accordingly, that the PAPM be as a minimum aligned with PMI's certification standards.

1.7 Program Life-Cycle. PAPM is envisioned to being offered indefinitely and to an expanding market through ultimately online delivery; both the local and distant markets are considered sizable, and PAPM, as a first-mover offering to a growing industry need, could well establish itself before direct competition arrives (see the following Needs Assessment).

PART TWO—NEEDS ASSESSMENT

2.1 Proposal Background

The purpose of this section is to detail the market needs and potential for the October 2012 proposal to create a new Post Baccalaureate Certificate in Aerospace Program Management. The proposal was earlier titled Post-Baccalaureate Certificate in Aerospace Systems Management, but as a result of the needs assessment, and for the remainder of this report, the term “systems” has been replaced by the word “program.” Program management is the management processes associated with planning, resourcing, and controlling a multi-element and/or multi-dimensional development or change initiative; an initiative that does have a focused aim, but is normally complex in nature and composed of multiple sub-projects like as found in building and marketing a new aerospace system.

The roots of this proposal lie within an identified need for an alternate advanced, but not graduate, credential within the recently established education partnership between the University and the Royal Canadian Air Force (RCAF); a partnership which currently permits some 10 Air Force officers per year to earn their masters degrees in either engineering or public administration while taking advanced aerospace systems training at 17 Wing. However, while the roots lie within the Air Force relationship, the development of this proposal has since been driven by an identification of a much larger potential market—Manitoba’s and Canada’s Aerospace Manufacturing Industry.

The proposed program in aerospace program management is envisioned to target and serve younger aerospace managers/professionals (ages 25-35) in the aerospace manufacturing industry that require advanced education in aerospace development and program management, as well as deeper understanding of the aerospace industry at large. Beyond the professional aerospace manufacturing market, it is also envisioned to serve three secondary professional markets—the Air Force, the Air Transportation Industry and, finally, the aerospace public sector market made up aerospace affiliated departments and agencies.

As per Figure 2.1 below, from the outset of PAPM concept development, the ambition has been to develop an advanced program and credential that is clearly focused on aerospace product development and life cycle management, while being attractive and relevant to the broadest audience possible. Further, the intent has been to avoid traditional business and organization management coursing as that market need is already heavily satisfied by existing programs like CIM, MBA and MPA. Finally, the intention from the outset has been to ensure that the program rests on a well-established local aerospace market base, while enjoying the potential for greater growth beyond Manitoba.

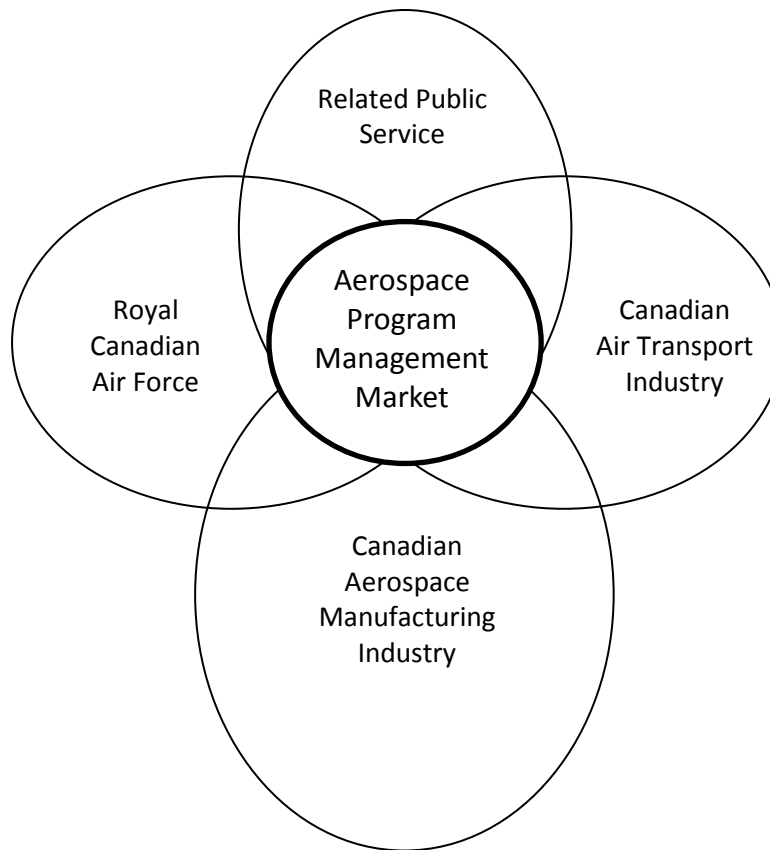


Figure 2.1: Aerospace Program Management Markets

As detailed in the sections that follow, the Needs Assessment has verified that:

- **A unique and pressing aerospace program management need does exist;**
- **A sizable local and national market and interest does exist;**
- **No direct competition in Canada currently exists; and**
- **PAPM promises a strong, sustainable revenue stream at low upfront risk.**

Further, the review process has confirmed and strengthened the multi-faculty, as well as Air Force and local industry, interest in pursuing this initiative. The program design is seen as both on target from a needs perspective and innovative and entrepreneurial in its delivery approach. Unanimous support to proceed with the initiative was received at a University-Air Force interdisciplinary planning meeting sponsored by FGS on 28 February 2013 and has been reconfirmed with individual stakeholders since. Alongside, strong encouragement to proceed

has been received from the office of VP Research (meeting with Dr. James Blatz, 30 January 2013), as the program initiative is seen as a very promising and innovative means to bolster and backstop the University's aerospace research relationship and agenda with the industry.

2.2 Needs Assessment Approach

Based on the program concept, as detailed in the October Letter of Intent, a marketability assessment was conducted over the period 1 November 2012 – 31 March 2013. The review was conducted by Mr. Stephen James, the Executive Coordinator Aerospace Programs out of the Faculty of Graduate Studies. Mr. James has over 30 years of aviation and aerospace affiliation and experience as well as over 15 years of adult and professional education experience. Further, he was one of the architects, and is the current coordinator, of a recently established University-Air Force graduate education partnership.

The marketability of the concept was assessed from four interdependent vantage points:

- **Industry Trends and Employer Need**—grounded on a comprehensive year-long Federal Government review of Canada's aerospace industry (the David Emerson Reports) released in November, the local and national industry education need was further explored and verified through attendance of two major industry conferences (one National 5-6 December & one local 16-17 January), and individual stakeholder consultations throughout;
- **Demand Potential and Applicant Need**—founded on industry workforce statistics obtained through Conference Board of Canada outlook reports, and two major workforce surveys (a 2008 Canadian aerospace human resource strategy review and a just-released 2012 US aerospace professional employee survey), the demand potential and applicant needs were established through an Air Force education meeting held last spring, a local aerospace industry HR-professionals round-table forum held 27 November, as well as interviews with Air Force personnel currently undertaking their master degrees in conjunction with the Air Force's Aerospace Systems Course;
- **Educator Competencies and Need**—as part of the Aerospace Research and Education Cluster (AREC) initiative, the academic capabilities and ambitions of the four core academic stakeholders—Mechanical Engineering (Faculty of Engineering), Political Studies (Faculty of Arts), Supply Chain Management (Asper School of Business), and the Canadian Forces School of Aerospace Studies—were ascertained and assessed in terms of their alignment with this initiative; and
- **Competitor and Complementer Potential**—employing an aerospace engineering and management web search, the extent and character of potential professional- and academic-based program competitors and complementers were ascertained.

A full list of conferences and meetings attended, individuals consulted, and documents and websites reviewed can be found in Appendix A.

For the purpose of this collaborative review, the marketability of the proposed program is first presented below in terms of the four individual market segments—Aerospace Manufacturing, RCAF, Air Transport and Aerospace Public Sector. Following the individual segment reviews, the market analysis concludes with an overarching market assessment.

2.3 Aerospace Manufacturing Industry Need (Primary Market)

Aerospace systems are some of the most complex and value-added technological systems in the world, and Canada (with Winnipeg therein) currently enjoys a strong global industry presence. Canada's aerospace sector ranks fifth in the world and directly employs some 66,000 people (5,000 in Winnipeg). The aerospace manufacturing industry has a small set of very large players, with the top 19 firms representing 87 per cent of sales. Nonetheless, beyond the large firms are some 670 small and medium-sized enterprises which are integrated into local and global supply chains. The country is home to a very large aerospace manufacturing cluster in Montreal followed by one in Toronto and one in Winnipeg.

Canada's industry, while strong and recognized worldwide, is under significant competitive pressure by major global manufacturers wishing to lean-out their supply chains, and by the growing presence of BRIC firms heavily supported by their home governments. All the reports reviewed, and at both conferences attended, the following issues were common themes throughout:

- **The Need for Greater Up and Cross Skilling** in response to ongoing nationwide professional engineering shortages and looming baby-boomer retirements;
- **A Shortage of Program Management Expertise** in a global industry increasingly demanding, and consolidating around, Tier 1 (systems integrators) firms that can manage the design, supply and production of major aerospace sub-systems. Inherent supporting expertise include,
 - **Requirements Management & Contracting,**
 - **Systems Development & Design Engineering,**
 - **Supply Chain Management,**
 - **Airworthiness and Regulatory Understandings, and**
 - **Product Life-Cycle Management;**

- **A Shortage of Green Technology Expertise** in a world of heightened energy costs and global warming concerns; and
- **A Shortage of Innovation & New Product Development Expertise** in a world of increasing aerospace competitiveness and competition.

Among the ranks of Canada’s aerospace manufacturing community are some 16,000 designated professionals (engineers, program and production managers, business administrators and scientists). Both in the US and Canada, the most significant workforce shortages are now seen to be among the professionals, and the situation is expected to further worsen over the coming decade. A recent US study noted that the “[m]ost difficult-to-fill positions in are in systems engineering, aerospace engineering, program management, mechanical engineering and software development/programming.”

AEROSPACE MANUFACTURING	WINNIPEG AREA (Classroom Delivery Option)	CANADA (Online Delivery Option)
Total Employees	5,300	66,000
Est Professional Element	600	16,000
Est Market Size	200	4,000

Table 2.1: Aerospace Manufacturing Market Size

It is estimated that out of the industry’s professionals the percentage under 35 is ~24%; a population that will need to be augmented and up-skilled to handle the baby-boomer departures. Winnipeg’s is home to the country’s third aerospace cluster with more than 40 SMEs, anchored by three global companies: Boeing Canada, Standard Aero, and Magellan Aerospace. In terms of the PAPM primary market, it is estimated the program could draw upon upwards of 200 target-group engineers and senior technologists while, nationally, the number is ~4000 (See Table 1). In discussion with local stakeholders, actual market demand or take-up is considered dependent upon the following:

- **Readily Employable Credential**—the PAPM must provide readily employable program management understandings and skills;
- **Recognized Advanced Credential**—the PAPM must be seen by both employees and employers as an advanced or senior credential; one that indicates intellectual development and achievement beyond, or at least, equal to previous achievements; and
- **Career Enhancing Credential**—the PAPM must aid career progression and opportunities.

2.4 Air Force Need (Secondary Market)

The RCAF, within the Canadian Forces, employs some 17,000 people and enjoys an extensive and very well developed training and professional development system for its personnel. A system that addresses for the most part its very special operational and administrative training needs. It can also call upon its own college system centred on the Canadian Forces Command and Staff College in Toronto and the Royal Military College in Kingston. That said, it does routinely draw upon external providers for very specialized training/education in aerospace and other disciplines when the needed through-put doesn't justify holding the expertise internally.

In the case of this initiative, the Air Force approached the University of Manitoba not for specific expertise, but rather to access a graduate credential for their Aerospace System Course graduates. The Aerospace Systems Course is a year-long technology management program held in Winnipeg to prepare young Air Force officers for subsequent aerospace procurement and test and evaluation jobs. In considering the PAPM potential within the Air Force, the issue isn't so much about satisfying a specific content need, but more in satisfying the external credential need of its Air Force officers undertaking the ASC program and others destined for aerospace program positions within DND. The Air Force interest a PAPM does reach beyond the limited number of officers annually allowed to attend the ASC. To that end, the Air Force ideally needs the PAPM to be:

- **ASC Complimentary** in that it offloads and certifies selected non-military/non-sensitive internal ASC teaching requirements in a coordinated and synergistic manner with its existing ASC program;
- **Aerospace Manufacturing and Systems Management Focused** in that it addresses the structure, needs and dynamics of the global aerospace manufacturing supply chain, and the standard systems development processes therein; and
- **Valued Senior External Credential** that is open to, and attainable by, individuals holding any substantive post-secondary academic credential/certification, while remaining demanding and valued in focus and curriculum.

DND Air Force	WINNIPEG AREA (Classroom Delivery Option)	CANADA (Online Delivery Option)
Total Employees	3,600	17,000
Est Professional Element	800	4,000
Est Market Size	200	1,000

Table 2.2: RCAF Market Size

The Air Force has 17,000 members for which 2,000 may be classified as professionals—that is, holding commissioned and senior non-commissioned ranks and having degrees and/or extensive post-secondary education. Driven by downsizing requirements through the 1990s, the service currently suffers from a bi-polar demographic, with a large younger 20-35 year cadre and a senior and pending retirement component, 45-60. It is estimated that the target market is in the order of 1,000 professionals, with 200 in the Winnipeg area at any given time. In terms of the Aerospace Systems Course attendees, it is estimated that four would undertake the PAPM on any given year, but the entire course (~12) could be required to take selected PAPM courses. In ongoing discussions, the Air Force has been very complimentary and supportive of the PAPM initiative estimating enthusiastic take-up by its professional ranks.

2.5 Air Transport Industry Need (Secondary Market)

Canadian Air Transport Industry is equivalent in size with the Aerospace Manufacturing Industry with some 65,000 employees. The industry is very competitive in nature, and continues to be under intense pressure to bring down operating costs while ensuring ongoing safe and quality service. It is a capital dependent and intensive industry, with business success highly dependent on acquiring the right aircraft(s) at the right time and price, and then minimizing the vehicles operating and life cycle costs. Dominant concerns include load-factor management, fuel management, route access and regulation management, and finally intensifying green operating demands. With the respect the PAPM, the needs of this secondary market has significant overlap with that needed within the aerospace manufacturing market; that is, expertise in aerospace program, supply chain and product life cycle management would all be well received in this market. That said, the applicability of the PAPM could be measurably strengthened for this market with the inclusion in the PAPM of an aviation management course, and to a lesser degree access existing Extended Education courses in operations and transportation management.

Air Transport Industry	WINNIPEG AREA (Classroom Delivery Option)	CANADA (Online Delivery Option)
Total Employees	5,000	65,000
Est Professional Element	500	6,000
Est Market Size	125	1,500

Table 2.3: Air Transport Market Size

Beyond requiring qualified technicians and aircrew, the industry usually draws upon college and university graduates in aviation, general management, and, to a lesser degree, engineering from across Canada for its operations, maintenance and business management roles. From the perspective of the industry's management community as well as likely pilot community, the PAPM will offer them a venue for both up- and cross-skilling, while remaining true to their aviation passion; as a general rule, pilots are driven by a love for their profession of flying. It is

assessed that the PAPM could be attractive to upwards to 125 local and 1,500 national aviation managers and pilots.

2.6 Aerospace Public Sector (Secondary Market)

Outside the Department of National Defence, the key government agencies that regulate Canada's aerospace industry are Transport Canada, NAVCAN and, to a lesser degree, Industry Canada (including Canadian Space Agency) and the Department of Foreign Affairs and International Trade. Provincial governments, including Manitoba's, also retain individuals/staffs responsible for the promotion and growth of their respective Aerospace Manufacturing and Air Transport industries; this particularly holds true in the Provinces of Quebec and Ontario. Beyond the detailed technical understandings of airworthiness and aviation safety, from a government agency perspective, the understanding of the industry structures, imperatives and dynamics are critical in the execution of their responsibilities; particular key current concerns include global competitiveness and market access, and Canadian product innovation.

Public Administration Agencies	WINNIPEG AREA (Classroom Delivery Option)	CANADA (Online Delivery Option)
Total Employees	150	2,000
Est Professional Element	100	1,000
Est Market Size	25	250

Table 2.4: Aerospace Public Size Market Size

From a public administrator's perspective the response to the PAPM will reside in how well and efficiently the program is seen as providing the critical aerospace understandings he or she needs to undertake aerospace policy and regulatory work, as well as how well does the credential increase his or her legitimacy in interfacing with industry groups/individuals. The ability to leverage the credential for both vertical and lateral progression is also seen as important considerations. It is estimated that this secondary market is composed of approximately 250 individuals with 25 locally situated.

2.7 Program Competitors and Complementers

The PAPM program combines an advanced credential with an industry focus and a growing interest in systems innovation, engineering and management. Accordingly, there is currently no direct national competitor to the proposed program. Nonetheless, five comparable certification offerings have been identified for benchmarking purposes:

- **Project Management Institute (PMI)** provides a program management certification process that is based on work experience as well as passing a program management body of knowledge exam; an exam supported by a PMI textbook;
- **University of Kansas** provides an Aerospace Management and Systems Certificate on completion of four short one-week courses. The certificate costs ~\$10,000 to complete. The course are:
 - Aerospace Applications and Systems Engineering,
 - Process-Based Management in Aerospace Defining, Improving and Sustaining Processes,
 - Project Management for Aerospace Professionals, and
 - Subcontract Management in Aerospace Organizations;
- **University of British Columbia** offers a Certificate in Program Management. At ~\$8,000, the certificate program is composed of the following online courses based on the PMI standards for program management;
 - Applied Program Management
 - Management, Leadership and Team Building for Business Analysts and Program Managers
 - Program Management Benefits
 - Program Management Governance
 - Stakeholder Engagement for Business Analysts and Program Managers; and
- **McGill University and École de technologie supérieure (ÉTS)** just commenced providing short hard engineering courses through a newly formed Centre for Aerospace Professional Education. The first courses begin in March 2013 and include topics such as Aircraft Design, Alloy and Composite Materials, Introduction to On-ground and In-Flight Aircraft Icing, Patent Tools for Aerospace Engineers, Certification and Flight Testing, Cabin Engineering and Avionics, Prevention of Liability for Aircraft Design, Manufacture and Marketing Defects, Simulation Methods for Aircraft Certification and Aviation and the Environment.
- **University of Winnipeg** administers a Masters Certificate in Project Management in partnership with York University. The seven-weekend program costs ~\$7,500. Certified by PMI, it delivers the PMI's Project Management Body of Knowledge curriculum and is seen as a potential feeder to the PAPM

Beyond these four benchmarks, nationally there is a spectrum of aerospace engineering degrees that focus on hard engineering topics and an assortment of basic aviation training programs; see Appendix B for the list of the programs. Alongside, a plethora of general management programs (CIM, MBA, etc.) can also be found across the country. In all cases, none of the programs specifically align nor compete with the PAPM. To the contrary, the nation's existing aerospace and aviation programs as well as the myriad of business programs are

viewed as PAPM complementers and reciprocal feeders. An individual holding an engineering or business credential would see the PAPM as a complementary and valuable addition to his or her skill set and resume.

2.8 Target Audience Conclusions

2.8.1 Consolidated Market Size. The market review has confirmed that within Manitoba’s and Canada’s aerospace community, a currently unsatisfied and growing need does exist for aerospace program managers—individuals that can oversee the development and life cycle management of complex and multi-disciplinary aerospace systems. While the core need resides in the aerospace manufacturing industry, the need also spills over into three secondary markets—the Air Transport Industry, the Royal Canadian Air Force, and the aerospace-related public sector market.

In considering the above and the overall industry size and demographics, it is concluded that an aerospace program management credential could be of an ongoing interest to upwards of 550 aerospace professionals locally and 6750 nationally (see Table 5). In a 2012 US aerospace industry study, the under 35 industry population most valued the technological challenge and the opportunity for professional development/education within their industry; a combination nicely aligned with an aerospace program management credential.

MARKET GROUP	MANITOBA (Classroom Delivery Option)	CANADA (Online Delivery Option)
Manufacturing	200	4,000
RCAF	200 (4 ASC students/year)	1,000
Air Transport Industry	125	1500
Related Public Service	25	250
Total	550	6750

Table 2.5: Estimated Total Market Sizes

2.8.2 Market Character. Further from the survey, respondents indicated that they saw that their future career growth was dependent on obtaining to various degrees the following:

- Management/leadership skills/experience;
- Advanced degree/credential in;
 - Computer/software skills;
 - Project management;
 - Business strategy/planning; and

- MBA.

Considering the respondents perspective and the earlier noted Canadian market observations, one can conclude that for the aerospace credential to succeed—that is, to draw the necessary applicants to sustain and grow a program—it must be a:

- **Pertinent Credential** that can be readily employed and exploited by the aerospace recipient and his or her firm/industry;
- **Respected Credential** that is recognized by the recipient and industry alike as a demanding and discriminating credential to earn;
- **Senior Credential** that attests to and certifies advanced intellectual achievement beyond already held undergraduate and/or professional credentials;
- **Broadening Credential** that enables expanded individual professional choice and growth on its receipt;
- **Complementary Credential** that is not only seen to be beneficial in its own right, but also seen as an enhancer to already held credentials/expertise as well as a potential complements and facilitator to more advanced future ones (e.g., MEng, MBA, MPA); and an
- **Accessible Credential** in terms of course scheduling and classroom/online usage as well as tuition and administrative burdens.

PART THREE—DESIGN AND DELIVERY

3.1 Learning Objectives. The PAPM is an advanced credential in aerospace program management. Aerospace program management involves engaging in the full spectrum of an aerospace system's life-cycle—from initial identification of system requirements; to the design, manufacturing and marketing of the system; to the system's ongoing employment and maintenance. PAPM program objectives are to provide the following:

- A clear understanding of the key factors in building and operating today's aerospace systems;
- The essential managerial skills and mindset for undertaking a complex aerospace development;
- An opportunity to exercise those skills through an actual project or a critical review of a past aerospace development; and
- The necessary understanding to pursue the Project Management Institute's project and/or program management certifications.

3.2 Curriculum Structure. The PAPM is composed of five mandatory 36-hour classroom courses, one elective course, and one three-day (18 hour) workshop in project management. The workshop is mandatory unless one has an established understanding of project management, obtained through either previous training and/or substantive on-the-job experience. The workshop must be completed prior to registering for MECH 4330 Aerospace Program Management and Systems Engineering.

3.3 Required and Elective Courses. The five required courses are offered by the Faculty of Engineering, the Faculty of Arts, the Asper School of Business, and Extended Education. For the early PAPM serials, the required credit courses used are departmental topic courses with the appropriate skill development focus, but not specifically "aerospace" in their application. On refining individual course contents, through initial program offering, new course descriptions will be developed and submitted for approval. Upfront, the only initial new course offering required for PAPM delivery is a Continuing Education non-credit course in "Aerospace Systems Analysis" as described below. PAPM's five required courses are:

- **EXT ED XXXXX Aerospace Systems Analysis (New Course, 36 hours)**—the aim of this course is to introduce students to the key system imperatives and elements in the design of air and space vehicles. The course will develop one's appreciation for the characteristics of the aerospace environment and its effect on the design of aerospace vehicles, and on the interplay between system employment, design and cost. Further, the course will introduce the fundamentals of writing Statement of Requirements (SORs)

and Requests for Proposals (RFPs). No pre- or co-requisite. (Notional Course Outline at Appendix C);

- **POLS 4160 Selected Topics 3: Aerospace Industry Structure and Government Regulation Cr. Hrs. 3**

- **University Calendar General Description.** The content of this course will vary. Contact department for 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.
- **PAPM Supplementary/Amplified Description.** Provided by the Department of Political Studies, this course will explore the structural, regulatory and political aspects of today's aerospace industry, with a heightened focus on its global nature. It will examine the critical linkages between operators, manufacturers and regulators, and the existing and necessary government-business relationships. No pre- or co-requisite. (Notional Course Outline at Appendix D);

- **OPM 4620 Production Management Seminar (Aerospace Product Life-Cycle Management) Cr. Hrs. 3**

- **University Calendar General Description.** 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 and OPM 2600
- **PAPM Supplementary/Amplified Description.** Provided by the Department of Supply Chain Management, the aim of this course is to explore the application of analytical methods in production and operations management with emphasis on planning and control. The course will give prominence to the use of the analytical methods within the aerospace product life-cycle management setting. Prerequisite: PAPM enrolment or MSCI 2150 and OPM 2600 (Notional Course Outline at Appendix E);

- **MECH 4330 Contemporary Topics in Manufacturing Engineering 1: Aerospace Program Management and System Engineering Cr. Hrs. 4**

- **University Calendar General Description.** 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.

- **PAPM Supplementary/Amplified Description.** Provided by the Department of Mechanical and Manufacturing Engineering, the aim of this course is to introduce the fundamental concepts of program management and systems engineering as they pertain to building an aerospace system. It will examine the dynamics of managing the wide-ranging considerations, stakeholders, and activities involved in a complex development and design activity, and in the pursuit of system and cost optimization. Pre-requisite: Project management and OPM 4620 Production Management Seminar.
- **EXT ED 38001 Applied Project: Capstone Course (New)** —The aim of this course is to integrate the material covered in the previous courses through an applied project of one's own choice; the project can either be focused on a current aerospace development initiative or a critical review of a historical one. The applied project will require candidates to write a proposal, collect and analyze data, and write a final report. This capstone course will provide students with the opportunity to not only synthesize the material presented elsewhere in the program, but also to connect with, and make a valuable contribution to, a specific project and/or industry player.

The program's elective requirement is recommended to be satisfied through either:

- One of the following Extended Education courses;
 - 98834 Intro to Operations Management,
 - 98832 Intro to Logistics,
 - 98831 Intro to Procurement,
 - 98833 Intro to Transportation,
 - 98751 Supply Chain Management,
 - 26001 Quality Assurance Planning,
 - 26002 Quality Improvement: Principle, and Procedures,
 - 25001 Introduction to Marketing,
 - New Aerospace Selected Topics, or
- An approved industry or other academic offerings; approval will be subject to course relevance and rigor, and will be provided on a case-by-case basis.

3.4 Completion Time. The program can be completed in as little as ten months, or be carried out over a maximum of three years, depending on student needs.

3.5 Curriculum Rationale. The PAPM curriculum is based on three years of content exploration and teaching experience as part of the University's partnership with Air Force and the delivery of the Air Force's Aerospace Systems Course (ASC) at 17 Wing. The curriculum has been refined over the last six months through the comprehensive needs assessment described in the previous section. It has a clear and expanding content pattern from understanding the

fundamentals of aerospace vehicle design to understanding the global political-economic forces at play in individual system developments. It has been reviewed by a sampling of potential future students with very positive feedback. PAPM's curriculum is considered very sound and marketable.

3.6 Teaching Methods and Delivery Format. Courses are envisioned to be initially delivered in and around the Winnipeg Airport in an after-hour, three-hour block format. Classes are to employ a variety of learning tools, including lectures, exercises, seminar discussions, guest speakers and company visits, but overall the case method is envisioned to be most utilized teaching method.

3.7 Teaching Rationale. Case teaching with classroom discussion is considered the most appropriate for PAPM as the course topics are generally multi-element, multi-factor, in nature and not disposed to mechanical lectures or right-wrong confirmations. Further, the case method is considered most appropriate when considering the envisioned mature student body largely drawn from the aerospace industry itself, as is the delivery format.

3.8 Flexible (Online) Study. Starting in year three, it is recommended that the program be offered online to reach the larger national market. Once online, the required courses are envisioned to be offered both in classroom and online formats indefinitely, allowing enhanced participation flexibility, particularly for local students.

3.9 Admission Requirements. PAPM admission is to be limited and competitive in nature. Admission will be considered based on the following criteria:

- **Education Profile**—a minimum of a three-year bachelor degree of any discipline from a recognized institution, or an equivalent combination of community college and professional education, as supported by transcripts;
- **Work Profile**—a minimum of three years of professional and/or management work experience as supported by a resume with two references; and
- **Needs Profile**—a letter indicating why the applicant wishes to pursue the credential, preferably to include reference to a company or organization sponsorship and/or future intent to work in the industry.

PART FOUR—CREDIT TRANSFER

4.1 Credit transfer into PBAM. Students may be able to receive advanced standing for previous academic study completed. Credit transfers and substitutions will be requested as part of one's application for admission and are considered on a case-by-case basis.

4.2 Graduate Laddering. Early exploratory laddering discussions have taken place with respect to the MENG, MPA and MBA programs. Graduate laddering will be formally pursued once PAPM approval has been received.

PART FIVE—RESOURCES

5.1 Teaching Resources. Resulting from the industry specific and interdisciplinary nature of the PAPM, the program content does not, in large part, straightforwardly draw upon existing campus expertise and coursing. However, the required foundation expertise in engineering, business management and public administration do reside inside the Departments of Mechanical and Manufacturing Engineering, Supply Chain Management and Political Studies.

Further, specific aerospace industry understanding and teaching expertise do exist locally and can be drawn upon. All the aerospace specialty topics have recently been delivered inside the Air Force' Aerospace Systems Course (ASC) at the CF School of Aerospace Studies, 17 Wing; a course and program which have been in existence for sixty years, and for which the University has an established connection with since 2009. The intention, in connection with this initiative, is to pursue "Teaching Centre" status for CFSAS in 2013-14. Beyond CFSAS, all three of Winnipeg's major aerospace firms—Boeing, Magellan, Standard Aero—have established teaching cadres from which the PAPM will be able to draw on through sessional appointments.

Finally, an established program management body of knowledge does exist across North America and is codified by the Project Management Institute's (PMI) "Program Management" certification standard. Creating and delivering the initial serial of the PAPM courses will require focused and dedicated effort, but all the requisite resources are available and initial planning and organizing has taken place. See Annex G for the proposed teaching team for 2013-14.

Individual PAPM instructors ideally possess a graduate degree or another advanced credential in their course's subject area combined with relevant professional experience.

5.2 Library Resources. Sizable aerospace holdings and periodicals are readily available through the following four libraries:

- Engineering Library (Aerodynamics, Aero-structures and Vehicle Design);
- Cohen Business Library (Supply Chain Management, Logistics and Transportation);
- CFSAS Aerospace Library (Aerospace Employment, Aerospace Avionics and Sensors); and
- Dafoe Library (Air and Space Policy and History).

5.3 Classroom Resources. As an industry-specific professional education program, it is understood that course location and scheduling (by term and by week) must be optimized for the student as well as for his or her employer. Accordingly, it is recommend that:

- courses be delivered off-campus in facilities near or at the Airport. Possible locations:
 - CF School of Aerospace Studies;

- 17 Wing Training Centre;
- Western Aviation Museum;
- Standard Aero's Centre for Aerospace Technology Training and Innovation; and
- all courses be delivered in a late-afternoon/early-evening three-hour format over 12 sessions followed by an optional exam week; and
- to allow for an individual to complete the program in as short as one year, the first serial of the five compulsory courses be scheduled as follows:
 - **Fall Term**—EXT ED XXXXX Aerospace Systems Analysis and OPM Project Management; and OPM 4620 Production Management Seminar: Aerospace Life-Cycle Management (3 CH)
 - **Winter Term**—POLS 4160 Aerospace Industry Structure and Government Regulation (3 CH); and MECH 4330 Aerospace Program Management and Systems Engineering (3 CH); and
 - **Spring Term**—Ext. Ed. 38001 Applied Project: Capstone Course

5.4 Counselling/Administrative Support. Given the expected strong Air Force PAPM response and the strong tie between aerospace and defence at large, it recommended that the Military Support Office's mandate be expanded to include the administration of PAPM. Administration would include overseeing marketing, applicant and student management, and annual programming and budgeting.

PART SIX—ADVISORY/PROGRAM COMMITTEE

6.1 General. A PAPM program committee is to be established on program approval, and configured and conducted in accordance with Extended Education's standard practices.

6.2 Committee Membership. Given the PAPM's multi-agency interest and commitment, it is recommended that the following organizations be represented on the program committee:

- **University Stakeholders**
 - Department of Political Studies
 - Department of Mechanical and Manufacturing Engineering
 - Department of Supply Chain Management
 - Continuing Education
- **External Stakeholders**
 - CF School of Aerospace Studies
 - Manitoba Aerospace Human Resource Council
 - Selected Industry Representatives (Boeing, Magellan, Standard Aero)

6.3 Program Regulations. In support of the committee's duties, a set of standing program policies and regulations will be developed. The resulting document will be compliant with senior University and Extended Education regulations, while addressing specific and/unique characteristics and needs of the PAPM program.

PART SEVEN—STUDENT EVALUATION

7.1 General. All the required courses will be graded using the University’s undergraduate letter grade and grade point average (GPA) system. The minimal certificate GPA is 2.0 with “D” as the minimum passing letter grade for an individual required course. The grade of “D” will be regarded as marginal, contributing to decreasing a grade point average to less than 2.0. Courses graded “D” may be repeated for the purpose of improving GPA.

Letter Grade	Grade Point Value	Description
A+	4.5	Exception
A	4.0	Excellent
B+	3.5	Very Good
B	3.0	Good
C+	2.5	Satisfactory
C	2.0	Adequate
D	1	Marginal
F	0	Failure

7.2 Project Management Workshop. No letter grade will be assigned for completion of the Project Management Workshop. However, student transcripts will note workshop completion or exemption.

7.3 Applied Project/Capstone Course. As per 7.1, the capstone paper will be graded using the letter grade system. The project mark will be determined by agreement of at least two assigned readers and a to-be-developed marking rubric. At least one reader must be knowledgeable in the project’s content and purpose.

PART EIGHT—COURSE AND PROGRAM EVALUATION

8.1 Course Evaluation. The University's SEEQ will be used for all required courses.

8.2 Program Evaluation. In proceeding with the PAPM, it is understood that its success and long term sustainability will be dependent on how useful and valuable the program and the credential is viewed by both potential applicants and the receiving aerospace employer/industry. To that end, it is recommended that the program's performance goals and indicators, as presented in the table below, be adopted and be reviewed annually by the Program Committee. The goals are aligned and responsive to the credential needs noted earlier in the market assessment section.

GOAL	DESCRIPTION	INDICATORS
Pertinent Credential	The PAPM curriculum is relevant and responsive to the aerospace industry program management needs	Industry/Employer Engagement Graduate Employment
Respected Credential	The PAPM curriculum is regarded by both students and employers as demanding and valuable	Applicant Quality Student Curriculum Satisfaction Graduate Compensation
Senior Credential	The PAPM credential attests to and certifies advanced intellectual achievement	Academia Credential Recognition Industry Credential Recognition
Broadening Credential	The PAPM increases one's professional choice and advancement prospects	Industry/Employer Utilization Graduate Career Paths
Complementary Credential	The PAPM invites and facilitates interdisciplinary and life-long professional development	Applicant Breadth Laddering Opportunities Laddering Usage
Accessible Credential	The PAPM is administratively and delivery-wise customer/student receptive and convenient	Application Process Ease Curriculum/Course Accessibility Student Responsiveness

Table 8.1 Recommended PAPM Performance Goals and Indicators

PART NINE—FINANCIAL PLAN

9.1 General. As with all CE administered programs a separate program account will be established to capture and report on all expenses and revenue. As agreed by the University Controller (attached), Extended Education will charge a program fee and all revenue for the first three years of the program will be managed by Extended Education. At the end of this three period, the program budget will be reviewed and the agreement may be extended for to up to two years. After this time the university fee-sharing agreement for degree credit courses may take effect.

9.2 Program Revenue & Tuition. As a new program, tuition and fees are at Extended Education's and the University's discretion, but ultimately, beyond at least covering as a minimum all program costs, tuition must take into account the market appreciation of the program, the direct and indirect program competitors, and the contribution needs of the Division and University at large. In considering for the moment only initial classroom delivery, it is recommended that after Year One, the minimum number of students necessary to offer a program serial be set at 12, with 24 being the ideal and 30 the maximum classroom numbers. Further, it is recommended that the tuition for a 12 person course load be sufficient to cover the incremental (direct variable) costs of offering the five dedicated courses, including an estimated cost of ~\$8,000 per instructor as well as promotional expenses incurred in recruiting for specific offerings. Concurrently, it is viewed that the tuition should be comparable to the University's 24 credit-hour master degree tuition and be price-point sensitive to the local marketplace. Consequently, it is recommended that the initial program tuition/student be set at \$5,340 for the program; a figure that will cover the projected costs of delivering the five courses to the minimum student number while being perceived locally as appropriate and competitive.

9.3 Program Life-Cycle Cost Management. Appendix H details the PAPM projected revenues and expenses for the first five years. Following an initial start-up year (2013-14), the program is envisioned to go through two growth phases before reaching steady-state in 2017:

- **Start-Up (2013-2014)**—year 1, with six students, will breakeven with three courses delivered by the Canadian Forces School of Aerospace Studies, 17 Wing, and program and student administration absorbed respectively by the Executive Coordinator, Aerospace Programs, FGS, and Continuing Education;
- **Classroom Delivery (2014-2016)**—years 2 & 3 are expected to see steady local classroom growth with 16 and 20 students respectively. Gross profits will progressively increase; however, the program will require a projected \$40 K cash infusion in years 3 and 4 to undertake initial online development. Additional marketing expenses as detailed below are also anticipated. Curriculum and student administration will progressively be assumed by Continuing Education;

- **Classroom & Online Delivery (2016-2018)**— Local classroom delivery will be accompanied by online program delivery. For planning purposes, the online program tuition has been set at \$7,495 with online enrolment progressively increasing over the first three years to a steady-state projection of 50 students/year. With the steadily increasing revenues (upwards of \$500K by year 6) progressive investment in program selling, administrative and development activities is foreseen.

9.3 Program Start-Up Costs. For the initial start-up year (2013-14), it is not anticipated that the program will not enjoy the minimum 12 students to cover the program's incremental costs (sessional instructors). To handle the expected revenue shortfall, the following, as a onetime only, is proposed:

- Executive Coordinator, Aerospace Programs, FGS, provide start-up program oversight and local promotion;
- Continuing Education administer the small number of start-up students within its existing resources;
- Pilot program be located and run in parallel with the Air Force's Aerospace Systems Course at 17 Wing. Alongside the ASC participants, the local aerospace industry will be invited to send and support a small initial contingent of participants;
- As part of the ASC curriculum and its resource envelope, the following two courses as well as the Project Management Workshop (August 2013) be delivered by CF School of Aerospace Studies, but open to PAPM civilian participants;
 - EXT ED XXXXX Aerospace Systems Analysis (Fall Term),, and
 - POLS 4160 Aerospace Industry Structure and Government Regulation (Winter Term); and
- The remaining PAPM courses provided by Extended Education from the expected start-up program revenue;
 - SCM 4620 Aerospace Life-Cycle Management (Fall Term),
 - MECH 4330 Aerospace Program Management and Systems Engineering (Winter Term), and
 - Ext. Ed. 38001 Applied Project: Capstone Course (Spring Term)

9.4 Ongoing Financial Management. As already noted, the PAPM revenue and costing model is complicated by the multi-faculty nature of the program. Accordingly, it is recommended that the profit centre/business line, at least at the outset (first three years), be financial administered as follows:

- Program enrolled students will pay a program fee, prorated in the event of transfer credit;
- All program revenue will be received and administered by Extended Education;
- All mandatory courses, credit and non-credit alike, will be administered on a sessional instructor basis and Extended Education will pay all the sessional costs out of the revenues received;
- Finances of the program will be administered based on the budget forecast attached. Arrangements will be made by senior administrators of the respective partners to allocate profits (revenues net of direct and indirect cost of delivery);
- All mandatory courses, credit and non-credit alike, are to be open to all campus students holding the required pre-requisites. Course access, however, will be only permitted after PAPM needs have been satisfied. Non-PAPM students will pay course fees to, and as dictated by, their respective programs. Occasional student revenues will go to the PAPM program.
- An agreement has been reached with University Central Administration for Extended Education to retain all tuition revenue from the program for its initial three years of operation. There is an option to revisit the agreement prior to the end of the three years, with a possible option to extend the arrangement for a further two years.

PART TEN—MARKETING PLAN

10.1 General. PAPM is an industry specific program which dramatically focuses the program's marketing needs and efforts. In geographic terms, the three largest potential PAPM market clusters reside in Montreal, Toronto and Winnipeg, with Ottawa and Vancouver also deserving some attention. All four market segments by activity—manufacturing, civil aviation, the Air Force, and government civil aerospace regulatory agencies—all subscribe to/participate in a handful of publications and forums. The key industry information node points are:

- **Aerospace Industry Association Canada** website and annual conference (including tradeshow; usually held late fall);
- **Manitoba Aerospace Association** website and annual Western Canada conference (including tradeshow; usually held spring);
- **Wings Magazine**—provides coverage of commercial, corporate, general and military aviation in Canada and around the world;
- **Canadian Skies Magazine (Online and print)**—published six times per year, the magazine reports on all sectors of the aviation industry;
- **The Maple Leaf Magazine**—reports on Canadian Forces news and issues; and
- **Canadian Air Force Journal**—focuses on Air Force academic and professional articles/editorials .

10.2 Market Challenges. Notwithstanding the focused marketplace, the PAPM does have two initial marketing challenges:

- **Limited Aerospace Reputation.** While the University of Manitoba has pockets of expertise in aerospace matters, the University overall is not known as a leading aerospace institution. Initial marketing will need to establish a recognizable and sustainable brand; and
- **Post-Baccalaureate Recognition.** The advantage of selecting the Post-Baccalaureate Certificate credential—its positioning between the undergraduate and graduate credentials—does come with a shortcoming, it is not widely used or recognized. That is, the marketplace does not readily recognize its academic standing and this will require focused and sustained marketing attention; arguably, both on and off campus. Further, within the local aerospace manufacturing community, an earlier failed attempt back in the late 1990s to offer a Post-Baccalaureate in Aerospace Manufacturing may confuse and/or discourage current market adoption. Although the market memory of the

previous program is considered faint, again, clarity and intensity of program messaging is considered critical to its success, particularly early on.

10.3 Soft Entry Start-Up Strategy. To enjoy early entry and positioning in the marketplace, it is recommended that the PAPM be initially offered September 2013. It is understood that early start-up will suffer from little market preparation/advertising. Further, it's understood that traditional course development times and approval processes will be compromised by the short timelines. However, given the early market challenges noted in 10.2, as well as expected first-mover benefits, the 2013 start is considered highly advantageous. Hence, it is recommended that a soft market entry be pursued for this coming year with the curriculum delivered to a small cadre composed of Air Force and local industry participants; participants ideally encouraged and sponsored by their respective employers. Through the initial offering, individual baseline course content will be confirmed with finalized course write-ups and approvals; however, more importantly PAPM's presence and brand will become progressively known through the year by means of word-of-mouth or hallway talk. Alongside delivering PAPM courses through 2013-14, a focused local marketing strategy will be commenced for 2014-2015 recruitment.

10.4 Local Promotion. Starting this fall and retained thereafter, local PAPM promotion and brand development will occur through:

- Creating initial website and program promotional (See Annex H for notional PAPM write-up);
- Scheduled on-site information sessions at 17 Wing, Boeing, Magellan, and Standard Aero;
- Participation in the Manitoba Aerospace Human Resource Council, and
- Contributing to local industry publications/forums through providing articles/presentations and/or staffing information tables.

10.5 Distant Promotion. Starting in year three and with the go ahead to proceed with online delivery, it is recommended that national marketing initial focus on the large Montreal and Toronto markets followed by Ottawa and Vancouver in subsequent years. Industry online venues as well as conference events are considered the most promising means to generate national brand recognition. North American-wide partnering/marketing is considered a natural possibility once PAPM is established nationally, estimated after 2018.

APPENDIX A:

CONSULTED SOURCES

Conferences, General Meetings, Group Meetings

Meeting with CF School of Aerospace Studies Commandant and Staff, Winnipeg, 2 October 2012

Attendance Manitoba Aerospace Association Annual Meeting, Winnipeg, 3 October 2012

Meeting with Manitoba Aerospace Human Resource Council, Winnipeg, 9 November 2012

Meeting with Manitoba Industry Representatives on PAPM proposal, Winnipeg, 27 November 2012

Attendance 2012 Canadian Aerospace Summit, Ottawa, 5-6 December 2012

Attendance Manitoba Aerospace Workshop: Technology Priorities, Economic Development and the Emerson Aerospace Review, Winnipeg, 16-17 January 2013

Meeting with PAPM key stakeholders, Winnipeg, 28 February 2013

Western Aerospace Expo Conference, Winnipeg, 6-9 May 2013

Individual Consultations

Internal

Dr. James Blatz, Associate VP Partnerships

Dr. George McLead, Associate Dean, FGS

Dr. Robert Hoppa, Associate Dean, Arts

Dr. Steve Lecce, Head, Political Studies, Arts

Dr. Andrea Rounce, MPA Program Director, Arts

Dr. Beddoes, Dean, Engineering

Dr. Doug Ruth, Associate Dean, Engineering

Dr. David Kuhn, Dept Head, Mechanical and Manufacturing Engineering

Ms. Kathryn Atamanchuk, Engineer-in-Residence (Standard Aero Secondment)

Dr. Tarek ElMekkawy, Associate Professor, Mechanical and Manufacturing Engineering

Dr. Michael Benarroch, Dean, Asper School of Business

Dr. Ron McLachlin, Head, Supply Chain Management

External

Mr. Ken Webb, Executive Director, Manitoba Aerospace

Mr. Wendell Wiebe, Executive Director, Manitoba Aerospace Human Resource Council

Mr. Robert Manson, Project Manager—Aerospace, Manitoba Government

Ms. Donna Roberecki, Project Manager, Entrepreneurship, Training and Trade

Mr. Brent DePape, Senior Policy Analyst, Western Economic Diversification Canada

Mr. Rick Jensen, Director, Program Management, Boeing Canada

Mr. Kim Olson, Senior VP, Standard Aero

Ms. Florence Ticzon, Senior Manager, Human Resources Standard Aero

Mr. John Leroux, Director, Technical Training and Development, Standard Aero

Mr. Don Boitson, VP and GM, Magellan Aerospace
Mr. Dave O'Connor, Director, Marketing and Space, Magellan,
Mr. Walter Czyrnyj, Director Quality and Engineering, Magellan
Mr. Geoffrey Languedoc, Executive Director, Canadian Aeronautics and Space Institute
Colonel Blaise Frawley, Commander, 17 Wing
Lieutenant-Colonel Brad Baker, Commandant, CF School of Aerospace Studies
Major Brian Statham, ASC Course Director, CF School of Aerospace Studies
Mr. Jeff Paul, Senior Instructor, CF School of Aerospace Studies
Major Vern Greenway, Air Training, 1 Canadian Air Division
Major Rob Morrow, Directorate Air Personnel Strategy, National Defence Headquarters

Documents Reviewed

Aerospace Globalization 2.0: Implications for Canada's Aerospace Industry: A Discussion Paper (Ann Arbor, MI USA: AeroStrategy Consulting, November 2009)
Aerospace Short Course 2013 Course Catalog (Kansas: University of Kansas, 2012)
AIAC 2012-2013 Guide to Canada's Aerospace Industry (Ottawa: AIAC, 2012) AEROSPACESTRY
Canadian Aerospace Human Resources Strategy (Ottawa: Canadian Aerospace Associations Human Resources Alliance, 31 March 2008)
Canadian Industrial Outlook: Canada's Aerospace Product Manufacturing Industry (Ottawa: Conference Board of Canada, Autumn 2012)
Canadian Industrial Outlook: Canada's Air Transportation Industry (Ottawa: Conference Board of Canada, Winter 2013)
Hedden, Carole. **Aviation Week Workforce Study 2012** (Aviation Week & Space Technology, 13 August 2012)
Emerson, David. **Aerospace Review, Volume 1, Beyond the Horizon: Canada's Interests and Future in Aerospace** (Ottawa: Government of Canada, November 2012) Accessed 21 March 2013 <http://aerospacereview.ca/eic/site/060.nsf/eng/home>
Emerson, David. **Aerospace Review, Volume 2, Reaching Higher: Canada's Interests and Future In Space** (Ottawa, Government of Canada, November 2012) Accessed 21 March 2013 <http://aerospacereview.ca/eic/site/060.nsf/eng/home>
Manitoba Aviation & Aerospace (Winnipeg: Pegasus Publications, Issue 21, Fall 2012)
Future Major Platforms Report (Ottawa: AIAC, May 2008)
Jenkins, Tom. **Innovation Canada: A Call to Action** (Ottawa: Government of Canada, 2008) Accessed 21 March 2013 http://rd-review.ca/eic/site/033.nsf/eng/h_00287.html
Summary Report: Manitoba Aerospace Workshop, January 16-17, 2013 (Winnipeg: Manitoba Aerospace Association, March 2013)
The State of the Canadian Aerospace Industry: Performance 2011 (Ottawa: AIAC, July 2012)
The Strategic and Economic Impact of the Canadian Aerospace Industry (Ottawa: Consulting Report for the Aerospace Industry Association Canada, October 2010) Accessed 21 March 2013 http://www.aiac.ca/uploadedFiles/AIAC_ExecSummary

Websites Reviewed

Aerospace Industry Association at <http://www.aia-aerospace.org/>
Aerospace Industry Association Canada at <http://www.aiac.ca/>
Aero Montreal at <http://www.aeromontreal.ca/homepage/>
Air Transport Association of Canada at <http://www.atac.ca/>
American Institute of Aeronautics and Astronautics at <https://www.aiaa.org/>
Manitoba Aerospace Association at <http://www.manitoba-aerospace.mb.ca/>
Manitoba Aerospace Human Resource Coordinating Committee at
Canadian Aeronautics and Space Institute at <http://www.casi.ca/>
Canadian Airports Council at <http://www.cacairports.ca>
Kansas University Continuing Education at <http://www.continuinged.ku.edu/aero/>
MIT Aerospace and Astronautics at
<http://engineering.mit.edu/education/graduate/aeroastro.php>
Ontario Aerospace Council at <http://www.ontaero.org/>
Project Management Institute at <http://www.pmi.org/>
Red River College at <http://rrc.mb.ca/>
Royal Canadian Air Force at <http://www.rcaf-arc.forces.gc.ca/>
Transport Canada at <http://www.tc.gc.ca/>
University of British Columbia Continuing Studies at <http://www.cstudies.ubc.ca/>

APPENDIX B: CANADIAN AEROSPACE DEGREE PROGRAMMES

ENGINEERING

QUEBEC

MONTREAL

Concordia University offers a graduate program in aerospace engineering with a focus on structures, flight controls, propulsion and space. Degree offered: Master in Aerospace Engineering.

McGill University offers a graduate program in aerospace engineering. Degree offered: MEng in Aerospace Engineering.

Ecole de technologie superieure (ETS) offers some graduate coursing in aerospace engineering.

Ecole Polytechnique de Montreal offers out of its Faculty of Mechanical Engineering some courses in aeronautics.

QUEBEC CITY

Laval University offers an MSc in Aerospace Engineering with specializations in propulsion, avionics, structures and materials and space technology.

SHERBROOKE

University of Sherbrooke offers a master degree in aerospace engineering through its Department of Mechanical Engineering.

ONTARIO

TORONTO

University of Toronto offers both undergraduate and graduate degree programs in the field of aerospace engineering. Research work conducted there is on propulsion, structures, aerodynamics, etc. The University of Toronto is home of the Institute for Aerospace Studies (UTIAS), which conducts research in both aeronautical and space systems engineering. Degrees offered: MEng, MASC, PhD in Aerospace Engineering.

Ryerson University offers both undergraduate and graduate programs in the field of aerospace engineering, with focuses on structures, propulsion, flight control and aerodynamics, Degrees offered: MEng, MASc & PhD in Aerospace Engineering.

York University offers an undergraduate program in space engineering with upper year courses in space communications, orbital mechanics, mission design and engineering design.

OTTAWA

Carleton University offers both undergraduate and graduate programmes in aerospace engineering with interests in aerodynamics, propulsion, and flight structures. Degrees offered: BEng, M.A.Sc, M. Eng and PhD in Aerospace Engineering.

University of Ottawa offers graduate programmes in aerospace engineering with expertise in

propulsion, aircraft structures, aircraft manufacturing and flight control. Degrees offered: MASc and MEng in Aerospace Engineering.

KINGSTON

Royal Military College of Canada offers an option within engineering science as well as graduate degrees in aerospace engineering. Degrees offered: MASc and PhD in Aeronautical Engineering.

WESTERN CANADA

WINNIPEG

University of Manitoba, through the Department of Mechanical and Manufacturing Engineering, offers an aerospace option within its Mechanical Engineering BSc.

EDMONTON

University of Alberta offers an undergraduate Mechanical Engineering (Aerospace) degree.

AVIATION AND AVIATION MANAGEMENT _____

MARITIMES

FREDERICTON

University of

New Brunswick offers, through the Faculty of Business Administration, a Bachelor of Business Administration in aviation and operations management and a Certificate in Business Administration and Aviation.

MONCTON

Mount Allison University, through the Faculty of Science, offers a Bachelor of Science in aviation.

QUEBEC

MONTREALConcordia University, John Molson School of Business, Aviation Management Institute, Certificate courses in aviation and airport management

HEC Montreal & Toulouse Business School, Certificate in Aerospace Management

ONTARIO

LONDON

University of Western Ontario, Faculty of Social Science, Bachelor of Management and Organizational Studies in Commercial Aviation Management

WATERLOO

University of Waterloo: Faculty of Science, Bachelor of Science degrees in Earth Sciences Aviation, Physics and Aviation and Science and Aviation; and Faculty of Environment, Bachelor of Environmental Science in Geography and Aviation

WESTERN CANADA

EDMONTON

Grant MacEwan University, School of Business, Diploma in Aviation Management

VANCOUVER

University of the Fraser Valley, School of Business Administration, Bachelor of Business Administration in Aviation

KELOWNA

Okanagan University College, School of Business, Diploma in Commercial Aviation

APPENDIX C: NOTIONAL COURSE OUTLINE

EXTENDED EDUCATION XXXXX AEROSPACE SYSTEMS ANALYSIS

COURSE DESCRIPTION

The aim of this course is to introduce students to the key system imperatives and elements in the design of air and space vehicles. The course will develop one's appreciation for the characteristics of the aerospace environment and its effect on the design of aerospace vehicles, and on the interplay between system employment, design and cost. Further, the course will introduce the fundamentals of writing Statement of Requirements (SORs) and Requests for Proposals (RFPs). No pre- or co-requisite.

COURSE OBJECTIVES

The course objectives are to provide key understandings and skills to:

- **Define Aerospace Requirements;**
- **Create an Initial Vehicle Sizing; and**
- **Assess Major Sub-system Configurations.**

COURSE MATERIAL

Raymer, Daniel. Aircraft Design: A Conceptual Approach, 4th Ed., Virginia: American Institute of Aeronautics and Astronautics, 2006

COURSE ASSESSMENT

Students understanding will be assessed through a combination of in-class exams and a final RFP assignment.

COURSE CONDUCT

Extended Ed XXXXX is composed of twelve three-hour sessions. The sessions will review assigned text readings amplified by classroom exercises and selected case studies.

PART ONE: AEROSPACE REQUIREMENTS
SESSION 1: Aerospace Environment Topics: Atmosphere & Lift, Near Space & Orbit
SESSION 2: Aerospace Employment & Vehicle Types Topics: Transportation, High Ground Observation, Security; Lighter-than-Air, winged bodies, helicopters, & rockets;
SESSION 3: Defining Aerospace Requirements Topics: RFPs,& Proposals; Raymer, Chapters 1 & 2
PART TWO: AERODYNAMICS & VEHICLE DESIGN
SESSION 4: Sizing from a Conceptual Sketch Topics: Raymer, Chapter 3
SESSION 5: Airfoil and Geometry Selection Topics: Raymer, Chapter 4
SESSION 6: Thrust-to-Weight Ratio and Wing Loading Topics: Raymer, Chapter 5
SESSION 7: Initial Sizing Topics: Raymer, Chapter 6
PART THREE: INTERNAL SUBSYSTEMS
SESSION 8: Configuration Layout and Loft Topics: Raymer, Chapter 7 & 8
SESSION 9: Crew Station, Passengers, and Payload Topics: Raymer, Chapter 9
SESSION 10: Avionics Topics: Navigation, Communications, Sensors
SESSION 11: Propulsion and Fuel System Integration Topics: Raymer, Chapter 10
SESSION 12: Landing Gear & Subsystems Topics: Raymer, Chapter 11

APPENDIX D: Notional Course Outline

POLS 4160 SELECTED TOPICS: AEROSPACE INDUSTRY STRUCTURE AND GOVERNMENT REGULATION

COURSE DESCRIPTION

Provided by the Department of Political Studies, this course will explore the structural, regulatory and political aspects of today's aerospace industry, with a heightened focus on its global nature. It will examine the critical linkages between operators, manufacturers and regulators, and the existing and necessary government-business relationships. No pre- or co-requisite.

COURSE OBJECTIVES

The course objectives are to provide key understandings and analysis skills related to the Aerospace Industry's:

- **Legal & Regulatory Structure**—appreciate the international laws and organizations that oversee and coordinate aerospace activities worldwide;
- **Value/Supply Chain Configuration**—an understanding of the facilitators, drivers and imperatives of operating an aerospace firm, and in generating new aerospace products;
- **Government Policy Environment**—understand government's four key aerospace interests—national security, public safety, business development and technological innovation;

COURSE MATERIAL

Fleischer, Craig. **Business and Competitive Analysis: Effective Application of New and Classic Methods**, USA: FT Press, 2007

COURSE ASSESSMENT

Students understanding will be assessed through a combination of value chain analysis and policy analysis assignments.

COURSE CONDUCT

POLS 4160 is composed of twelve three-hour sessions. The sessions will review assigned text readings amplified by selected case studies.

PART ONE: AEROSPACE LAW AND REGULATIONS
SESSION 1: History of Aviation and International Air Law Topics: Law Origins, Chicago Treaty, ICAO & Air Regulation
SESSION 3: History of Space Flight & International Space Law Topics: Space Law Origins, Outer Space Treaty, COPUOS & Space Regulation
SESSION 4: Today's Legal and Regulatory Structure Topics: ICAO, FAA, Transport Canada Responsibilities and Issues
PART TWO: TODAY'S GLOBAL INDUSTRY STRUCTURE
SESSION 4: Today's Aerospace Industry Topics: Global Value Chain, Multi-national Corporations, Competition
SESSION 5: North American Aerospace Industry Topics: Origins & Trends, Structure, Major Players, Strengths and Weaknesses
SESSION 7: EU Aerospace Industry Topics: Origins & Trends, Structure, Major Players, Strengths and Weaknesses
SESSION 8: Aerospace Outside the North Atlantic Region Topics: Origins & Trends, Structure, Major Players, Strengths and Weaknesses
PART THREE: GOVERNMENT POLICY & REGULATION
SESSION 9: Government & Aerospace Security Topics: Defence Procurement, Civil Aerospace Growth & Management
SESSION 10: Government & Business Development Topics: Airworthiness Requirements, Type Certification, Spaceworthiness
SESSION 11: Government & Aerospace Safety Seminar Topics: Airworthiness Requirements, Type Certification, Spaceworthiness
SESSION 12: Government & Aerospace Innovation Topics: Technology Readiness Levels, X-Planes, Green Aerospace

APPENDIX E: Notional Course Outline

OPM 4620: PRODUCTION MANAGEMENT SEMINAR (AEROSPACE LIFE-CYCLE MANAGEMENT)

COURSE DESCRIPTION

Provided by the Department of Supply Chain Management, the aim of this course is to explore the application of analytical methods in production and operations management with emphasis on planning and control. The course will give prominence to the use of the analytical methods within the aerospace product life-cycle management setting. Prerequisite: PAPM enrolment or MSCI 2150 and OPM 2600.

COURSE OBJECTIVES

The course objectives are to provide a broad understanding and fundamental skills related to:

- **Aerospace Development Management and Costing;**
- **Aerospace Production Management and Costing;** and
- **Aerospace Operations and Maintenance Management and Costing.**

COURSE MATERIAL

Shafer, Meredith. **Operations Management For MBAs**, 4th Ed. USA: John Wiley & Sons, 2010

Dhillon, B. **Life Cycle Costing For Engineers**, Boca Raton, Florida: CRC Press, 2010

Selected Articles and Cases

COURSE ASSESSMENT

Students understanding will be assessed through a combination of costing assignments and multi-element case studies.

COURSE CONDUCT

OPM 4620 is composed of twelve three-hour sessions. The sessions will review assigned text readings amplified by selected case studies.

PART ONE: AEROSPACE DEVELOPMENT
SESSION 1: Initial Requirements & Concept Generation Topics: Dhillon Chapter 1
SESSION 2: Flight Demonstrators Topics: Dhillon Chapter 2
SESSION 3: The Design Process Topics: Dhillon Chapter 3, : Harvard Case: Dassault Systemes;
SESSION 4: Flight Certification Topics: Dhillon Chapter 4
PART TWO: AEROSPACE PRODUCTION
SESSION 5: Modular Design & the Aerospace Industry Topics: Shafer Chapter 2, 3; Morgan Chapter 6: Harvard Article: Modularity in Design and Manufacturing; Harvard Case: Boeing 737 Manufacturing Footprint: The Wichita Decision
SESSION 6: Aerospace Quality Control Topics: Shafer Chapter 4; Harvard Case: Pratt & Whitney: Engineering Standard Work; Dhillon Chapter 5
SESSION 7: Lean Processing & the Aerospace Industry Topics: Shafer Chapter 5; Darden School of Business Case:The F/A-18F Engine: Getting Lean (A)
SESSION 8: Supply Chain Management, & the Aerospace Industry Topics: Shafer Chapter 7; India Institute of Mgmt Case: Delivering Doors in a Window: Supply Chain Management at Hindustan Aeronautics Ltd
PART THREE: AEROSPACE OPERATIONS
SESSION 9: Initial Operations Topics: Dhillon Chapter 6
SESSION 10: Operations & Maintenance Topics: Dhillon Chapter 8
SESSION 11: Upgrading & Life Extension Topics: Dhillon Chapter 11
SESSION 12: Phase-out & Retirement Topics: Handout

APPENDIX F: Notional Course Outline

MECH 4330: AEROSPACE PROGRAM MANAGEMENT AND SYSTEMS ENGINEERING

COURSE DESCRIPTION

Provided by the Department of Mechanical and Manufacturing Engineering, the aim of this course is to introduce the fundamental concepts of program management and systems engineering as they pertain to building an aerospace system. It will examine the dynamics of managing the wide-ranging considerations, stakeholders, and activities involved in a complex development and design activity, and in the pursuit of system and cost optimization. Pre-requisite: Project management and OPM 4620 Production Management Seminar.

COURSE OBJECTIVES

The course objectives are to provide:

- **Enhanced Systems Thinking**—develop one’s appreciation of complex multi-element, multi-discipline system developments;
- **Program Management Understandings and Skills**—develop one’s fundamental program management understandings and skills in preparation of undertaking PMI’s Program Management Certification examination; and
- **Specific Aerospace Development Insights**—appreciate the unique characteristics and challenges of overseeing an aerospace development program.

COURSE MATERIAL

NASA, **Systems Engineering Handbook**, Washington: NASA, December 2007
PMI, **The Standard for Program Management**, 2nd Ed. Pennsylvania: PMI, 2008.
Selected Articles and Case Studies

COURSE ASSESSMENT

Students understanding will be assessed through a combination of knowledge quizzes and multi-element management case studies.

COURSE CONDUCT

OPM 4620 is composed of twelve three-hour sessions. The sessions will review assigned text readings amplified by selected case studies.

PART ONE: SYSTEMS ENGINEERING OVERVIEW
SESSION 1: Systems Thinking & Program Management
Topics: PMI Chapters 1,2, & NASA Chapters 1,2

SESSION 2: Problem Definition & System Requirements Topics: PMI Chapter 2, & NASA 4
SESSION 3: Program Life-Cycle & Program Management Processes Topics: PMI Chapter 3, & NASA Chapter 3
SESSION 4: Product Realization Topics: NASA Chapter 5
PART TWO: PROGRAM MANAGEMENT ELEMENTS
SESSION 5: Program Integration Management Topics: PMI Chapter 4
SESSION 6: Program Scope Management Topics: PMI Chapter 5
SESSION 7: Program Cost, Quality and Time Management Topics: PMI Chapter 6-8
SESSION 8: Program Human Resource and Communication Management Topics: PMI, Chapters 9, 10
SESSION 9: Program Risk Management Topics: PMI Chapter 10
SESSION 10: Program Procurement Management Topics: PMI Chapter 12
SESSION 11: Program Governance and Stakeholder Management Topics: PMI Chapters 14, 15
SESSION 12: Special Topics Topics: NASA, Chapter 7

APPENDIX G:

2013-14 TEACHING TEAM

EXT ED XXXXX Aerospace Systems Analysis (New Course)

Major Vern Greenway, BEng, QFI, ASC

Senior Pilot Instructor, 2 Canadian Air Division, 17 Wing, Winnipeg

Major Greenway received his undergraduate degree in Aerospace Engineering from the University of Oklahoma in 1985. He joined the Canadian Forces in 1986 receiving his pilot wings in 1989.. Major Greenway has worked as a flying instructor in Moose Jaw and an operational fighter pilot at Cold Lake Alberta. As a flying instructor, he has taught both Aerodynamics and Flight Instrumentation. He developed the current Aerodynamics syllabus used to instruct Canadian and NATO pilots. Major Greenway is an Aerospace Systems Course graduate and has taught advanced aerodynamics to ASC students for the last four years. Major Greenway has over 2000 hours flying jet and turbine aircraft and 400 hours as a civilian commercial pilot, and has over ten years of instructional experience.

POLS 4160 Selected Topics: Aerospace Industry Structure and Regulation

Mr. Michael Saville, MSc, MPA, ASC

Aerospace Technology Instructor, Canadian Forces School of Aerospace Studies, Winnipeg

Mr. Saville, a former Air Force Navigator, has extensive understanding and experience in airborne sensors. He is an ASC grad and has Masters of Science in Navigation from the UK. For the last eight years he has been teaching sensors as well as aerospace industry analysis at the CF School of Aerospace Studies. He's just completed his Masters of Public Administration from the University of Manitoba.

OPM 4620 Production Management Seminar: Aerospace Life-cycle Management, & 4330 Aerospace Program Management and Systems Engineering: Aerospace Applications

Stephen L. James, MA, MBA, MEng (fall 2013), CPA, ASC

Executive Programs Coordinator, Aerospace Programs, Faculty of Graduate Studies

Mr. James joined the Canadian Forces in 1973, earning his BSc (Physics) and BA (History), and his pilot wings over the next ten years. In 1989 he received his MA (War Studies), he became a defence planner and spent the following six years examining Canada's changing security environment. In 1996 he received his MBA from the University of Manitoba, and thereafter undertook several strategic planning and re-engineering positions a civilian aerospace and defence consultant. In 2001, Mr. James assumed a position at I.H. Asper School of Business where he directed the School's MBA and participated in the School's undergraduate and

executive programs. In July 2011, he moved to his current position within the Faculty Graduate Studies to administer Air Force graduate programming. He is a Certified Professional Accountant, and is currently completing his Master of Engineering degree in systems engineering. He has over fifteen years of teaching experience.

EXT ED 38001 Applied Project: Capstone Course

Mr. Jeff Paul, BSc, MPA, MASc (Winter 2014), ASC

Aerospace Technology Instructor, CF School of Aerospace Studies, 17 Wing, Winnipeg

Mr. Paul, a former Air Force communications officer, has extensive operational and instructional experience in the IT and communication environments. He has over ten years of instructional experience, recently teaching for both the Air Force and the Department of Mechanical and Manufacturing Engineering at the University of Manitoba. He is currently completing his Masters of Applied Science in Human Factors Engineering. Beyond teaching technical subjects, he also teaches effective oral and written communications at the CF School of Aerospace Studies.

APPENDIX H:
FIVE-YEAR BUDGET PROJECTIONS

	NOTES	#	Total	#	Total	#	Total	#	Total	#	Total
Face to face delivery	\$5,370/student in Y1 and Y2; \$6,495 in Y3;	6	32220	16	85920	20	119900	20	139900	20	139900
Online delivery	\$6,995 in Y4+.							30	224850	50	374750
Total Revenue	\$7,495/student		32,220		85,920		119,900		364,750		514,650
Direct cost of instructional delivery											
Instructor Salaries - F2F	\$8,000		24,000		40,000		40,000		40,000		50,000
Instructor salaries - OL	\$150/student								27,000		36,000
Benefits and Pay Levy (@17%)											
Course Delivery Travel											
Local Travel/Parking											
Textbooks											
Courier/Postage			-								
Instructional design support											
Other Expenses											
Other Expenses											
Other Expenses											
Other Expenses											
			24,000		40,000		40,000		67,000		86,000
Marketing (including advertising and other promotions)			2,220		8,000		12,000		54,713		77,198
Total direct costs			26,220		48,000		52,000		121,713		163,198
Development cost recovery	In Y3 and Y4, repurpose four courses for online delivery @ \$25,000/course	-	-	-	-	50,000		50,000		-	-
Overhead											
CE general and administrative expenses			9,666		25,776		35,970		109,425		154,395
Division Overhead			6,555		12,000		13,000		30,428		40,799
Net			(10,221)		144,000		(31,070.00)		53,184.38		156,258.13

APPENDIX I:
LETTER OF INTENT

LETTER OF INTENT POST BACCALAUREATE CERTIFICATE IN AEROSPACE SYSTEMS MANAGEMENT

Program Proposal Sponsors: Dennis Silverstrone, Area Director, Continuing Education (204-480-1022; silvestroned@extended.umanitoba.ca), and Stephen James, Executive Coordinator, Aerospace

Programs, Faculty of Graduate Studies (204-474-6400; Steve.James@ad.umanitoba.ca)

Program Proposal Unit: Extended Education in partnership with the Faculty of Arts, Faculty of Engineering, and the Asper School of Business.

Date: October 2012

1.1 Program Title. Responding to a long-established local industry need and growing opportunity, and leveraging the University's recent partnership with the Royal Canadian Air Force, this paper proposes to explore the creation of a **Post Baccalaureate Certificate in Aerospace Systems Management (PBCASM)**.

1.2 Program Description. The proposed program in aerospace systems management is to target and serve young aerospace managers/ professionals that require broader and deeper knowledge of the aerospace industry. The PBCASM, as envisioned, does address a currently underserved industry need in middle management development and would be an industry respected credential in its own right. That said, it is further envisioned that it would readily encourage and lead one to further study at the graduate level; specifically, within the University's MEng, MPA or MBA programs. PBCASM details include:

- **Program Objective**—this proposal rests on well-established local aerospace interests, and is to provide aerospace professionals—civilian and military, local and afar—the requisite advanced aerospace engineering and management knowledge and skills to enhance their contributions to, and careers in, the aerospace industry;
- **Program Content**—compliant with the University of Manitoba's *Non-degree Programs Taxonomy*, it is proposed that the PBCASM be composed of 9.0 credit hours required programming (three 4000-level courses) and 120 contact hours of non-degree programming from Extended Education. At the nucleus of the PBCASM, would be the following three required credit courses provided by their sponsoring Faculties/Departments – courses that collectively provide a holistic understanding of the global aerospace industry:
 - **MECG 4XXX Aerospace Design**—sponsored by the Department of Mechanical and Manufacturing Engineering, the aim of this course is to introduce students to the enablers and constraints of aerospace flight
 - **SCM 4XXX Aerospace Production and Life-Cycle Management**—sponsored by the Department of Supply Chain Management, the aim of this course is to introduce students to the fundamental practices, requirements and

challenges associated with the manufacturing and life-cycle management of an aerospace vehicle or sub-system; and

- POLS 4XXX Aerospace Political-Economy—sponsored by the Department of Political Studies, this course will examine the legal, political and economic structure and dynamics of the world's aerospace community.

Students are required to select 3 courses from the following Extended Education offerings:

- 23011 Canadian Business: An Introduction
 - 24027 Managerial Communications
 - 98997 Introductory Principles of Accounting and Budgeting
 - 24003 Organization Behaviour
 - 24027 Managing the Human Resource Function
 - 25001 Introduction to Marketing
 - 98834 Introduction to Operations Management
 - 98832 Introduction to Logistics
 - 98831 Introduction to Procurement
 - 98833 Introduction to Transportation
 - 98751 Supply Chain Management
 - 98434 Project Management
 - 26001 Quality Assurance Planning
 - 26002 Quality Improvement: Principles and Procedures
- **Program Market Potential**—building on an already established local Air Force interest and University agreement, the PBCASM is expected to be attractive to Manitoba's civilian aerospace community, and if eventually offered online, to the greater North American aerospace education marketplace; the program is innovative and unique in content and design;
 - **Program Risk**—the AREC proposal, including the PBCASM, is designed to be low risk in development and financially self-sustaining from the outset.

1.3 Division's Mission Relevance. As per the Faculty's mission and plan, the proposal not only "extends the resources of the University of Manitoba to meet a specific local and national learning need", but also promises to create a multidiscipline educational partnership that ultimately go beyond the campus.

1.4 Academic Units Involved. While considered more than capable of succeeding at its own, the PBCASM is ultimately envisioned to be part of a larger omnibus research and education initiative currently being championed by the Faculty of Graduate Studies. The initiative, entitled the Aerospace Research and Education Cluster (AREC) envisions the creation of a loose affiliation of aerospace academics on campus and industry stakeholders downtown for the purpose of facilitating interdisciplinary education and applied research in aerospace systems and systems management. The initiative seeks to harness the Faculty of Extended Education's expertise in professional and industry specific education with the long standing

aerospace research and education resources of the Faculty of Engineering (Dept of Mechanical and Manufacturing Engineering), Faculty of Arts (Dept of Political Studies) and the Asper School of Business (Dept of Supply Chain Management). Further, it seeks to enrich and further the developing relationships with the Royal Canadian Air Force and the Manitoba Aerospace Association. See attached AREC proposal for further explanation.

1.5 Development Timetable. Aligned and in-step with the overarching AREC initiative, the PBCASM is envisioned to unfold in three stages, taking upwards of three years:

- Stage 1: Program Development and Approval (Fall 2012- Spring 2013);
- Stage 2: Initial Local Program Delivery (2013-14); and,
- Stage 3: Program Refinement and Initial Online Delivery (2014 & beyond).

APPENDIX J:
LETTERS OF SUPPORT

November 14, 2012

Dear Kathleen,

Attached is the letter of intent from Continuing Education for a Post Baccalaureate Certificate in Aerospace Program Management. This letter signals our plans to collaborate with the departments of Mechanical Engineering, Business and Political Studies, as well as graduate Studies and the Canadian Airforce in investigating the need for and opportunities related this topical area. Preliminary discussions about this possible credential have been positive and our Area is very keen to proceed with our due diligence. Hence, our area supports proceeding with a market assessment.

Many thanks for your assistance with this process,

Best,

Dennis Silvestrone, PhD

Continuing Education

Canadian Forces School of Aerospace Studies
PO Box 17000 Stn Forces
Winnipeg MB R3J 3Y5



École d'études aérospatiales des Forces canadiennes
CP 17000 succ Forces
Winnipeg MB R3J 3Y5

4640-7 (AS FC)

25 June 2013

Dr. Dennis Silverstrone
Area Head, Continuing Studies
174A Extended Ed Complex
University of Manitoba
Winnipeg MB R3T 2N2

Dear *Dennis*

This letter is in regards to the new Post-Baccalaureate in Aerospace Program Management (PAPM) program being designed at the University of Manitoba (U of M). I would like to reassure you the Canadian Forces School of Aerospace Studies (CFSAS) is fully supportive of the direction and intent of this PAPM program. The PAPM promises to be an attractive program to our Aerospace Systems Course (ASC) students from among the Canadian Forces and international communities.

Through a Memorandum of Understanding that has been in place since 2010, CFSAS has enjoyed ready access to the University's MPA and MEng programs for its ASC students. It is believed this relationship has been positive for both U of M and CFSAS. While that access has been exercised by many of our students during the last three years, the combined ASC and graduate workload has also been difficult to sustain for some; especially given they are limited to an eleven-month posting at CFSAS. The PAPM, with its more aerospace specific and achievable curriculum, will permit and encourage more ASC students to undertake advanced study at the University. Moreover, this program is better aligned to core topics within the ASC curriculum; and, in many cases supplements existing ASC modules of instruction and adds to the U of M's repertoire of studies.

CFSAS was consulted early on in the development of this initiative and has since engaged in multiple discussions. It is rewarding to now see the PAPM program pending formal approval and we look forward to its initial implementation. Please contact me at (204) 833-2500 x 6395 or Major Michael Rehman at (204) 833-2500 x 5089 / 4647 if further clarification or confirmation is required.

Sincerely,

A handwritten signature in dark ink, appearing to be "B.S.P. Baker".

B.S.P. Baker
Lieutenant-Colonel
Commandant



UNIVERSITY
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Asper School of Business

Department of
Supply Chain Management
631-181 Freedman Crescent
Winnipeg, Manitoba
Canada R3T 5V4

June 7, 2013

Dr. Dennis Silvestrone
Area Head, Continuing Studies
174A Extended Ed Complex
University of Manitoba
Winnipeg, MB R3T 2N2

Dear Dr. Silvestrone;

The Department of Supply Chain Management supports the creation of the Post-Baccalaureate Certificate in Aerospace Program Management (PAPM) and the program's inclusion of OPM 4620 Production Management Seminar with the following course description for PAPM promotional and course outline purposes:

- **OPM 4620 Production Management Seminar (Topic: Aerospace Product Life-cycle Management)** Cr. Hrs. 3. Provided by the Department of Supply Chain Management, the aim of this topic is to explore the application of analytical methods in production and operations management with emphasis on planning and control. The course will give prominence to the use of the analytical methods within the aerospace product life-cycle management setting. Prerequisite: MSCI 2150 (or 164.215) and SCM 2160 (or OPM 2600 or 164.260) or instructor permission.

Support is subject to the following understandings:

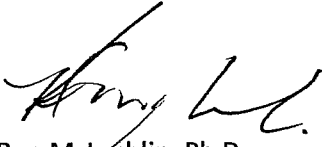
- **Amended Prerequisite Approval**—the prerequisites for the OPM 4620 course (with the specific topic of Aerospace Product Life-cycle Management) may be waived via instructor permission;
- **Course Scheduling and Registration**—the OPM 4620 course (with the specific topic of Aerospace Product Life-cycle Management) will be offered within Extended Education's course scheduling system and will be hidden from normal undergraduate student observation;
- **Joint Program Governance**—given PAPM is an multi-unit initiative, it will be overseen by a Program Committee in which all the contributing units, including the Department of Supply Chain Management, will be equally represented through committee membership;



- **Extended Education Program Administration**—overseen by the Program Committee, Extended Education will assume all PAPM promotion, recruitment, and delivery responsibilities, including the administration of all program revenues and costs. The Department of Supply Chain Management will bear no costs, including instructor compensation, with respect to this program;
- **Retained Departmental Course Authority**—notwithstanding the above, the Department of Supply Chain Management will retain final authority over the course content, delivery quality, and grade determination for OPM 4620 Production Management Seminar;
- **Priority Course Registration**—PAPM students will be given priority registration for PAPM delivered courses followed by home-unit approved graduate and senior undergraduate students from PAPM participating units. Registration requests beyond participating units will be considered thereafter, and in accordance with overall PAPM enrolment standards and individual course pre-requisite requirements; and
- **Outstanding Matters**—while currently premature to address and not a reason to avoid proceeding with the PAPM proposal, the following are recognized matters that need to be deliberated upon in the coming year: potential online delivery; program laddering/linking with MENG, MPA, and MBA; and long term market growth and profit sharing.

I look forward to PAPM approval and implementation. Please contact me if further clarification or confirmation is required.

Sincerely



Ron McLachlin, Ph.D.
Head, Dept of Supply Chain Management
Asper School of Business



UNIVERSITY
OF MANITOBA

Graduate Studies

George A. MacLean, PhD
Associate Dean
Professor of Political Studies
500 University Centre
University of Manitoba
Winnipeg, Manitoba R3T 2N2
Tel: 204.474-6621
Fax: 204.474-7553
George.MacLean@ad.umanitoba.ca

12 June 2013

Dr. Dennis Silvestrone
Area Head, Continuing Studies
174A Extended Ed Complex
University of Manitoba
Winnipeg, MB R3T 2N2

Dear Dr. Silvestrone:

I write in support of the initiative for a new Post-Baccalaureate in Aerospace Systems Management (PAPM). Having had some involvement in the development of the program, I can say that the Faculty of Graduate Studies views this as an integral part of the development of aerospace studies at the University of Manitoba, moving from primarily graduate studies to undergraduate as well. The University has nurtured a close relationship with our local aerospace industry and also the Royal Canadian Air Force through partnerships and new degree options. The PAPM will undoubtedly enrich the University of Manitoba's research and graduate education activities within the aerospace community specifically but also more generally in the high technology sector at large.

Best wishes with your deliberations regarding this program. Feel free to contact me if you feel I may be able to contribute in a positive manner.

Sincerely,

George A. MacLean, PhD
Associate Dean, Faculty of Graduate Studies
Professor, Department of Political Studies



UNIVERSITY
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Department of Political Studies

532 Fletcher Argue Building
Winnipeg, Manitoba
Canada R3T 5V5
Telephone 204-474-9521
Fax. 204-474-7585

June 12, 2013

Dr. Dennis Silvestrone
Area Head, Continuing Studies
174A Extended Ed Complex
University of Manitoba
Winnipeg, MB R3T 2N2

Dear Dr. Silvestrone;

The Department of Political Studies supports the creation of the Post-Baccalaureate Certificate in Aerospace Program Management (PAPM) and the program's inclusion of:

POLS 4160 Selected Topics: Aerospace Industry Structure and Regulation—provided by the Department of Political Studies, this course will explore the structural, regulatory and political aspects of today's aerospace industry, with a heightened focus on its global nature. It will examine the critical linkages between operators, manufacturers and government regulators, and the existing and necessary government-business relationships. No pre- or co-requisite.

Support is subject to the following understandings:

- **Joint Program Governance**—given PAPM is a multi-unit initiative, it will be overseen by a Program Committee in which all the contributing units, including the Department of Political Studies, will be equally represented through committee membership;
- **Extended Education Program Administration**—overseen by the Program Committee, Extended Education will assume all PAPM promotion, recruitment, and delivery responsibilities, including the administration of all program revenues and costs. The Department of Political Studies will bear no costs, including instructor compensation, with respect to this program;
- **Retained Departmental Course Authority**—notwithstanding the above, the Department of Political Studies will retain final authority over the course content, delivery quality, and grade determination for POLS 4160 Selected Topics: Aerospace Industry Structure and Regulation;
- **Priority Course Registration**—PAPM students will be given priority registration for PAPM delivered courses followed by home-unit approved graduate and senior undergraduate students from PAPM participating units. Registration requests beyond participating units will be considered thereafter, and in accordance with overall PAPM enrolment standards and individual course pre-requisite requirements; and

- **Outstanding Matters**—while currently premature to address and not reason for not proceeding forward with the PAPM proposal, the following are recognized matters that need to be deliberated on in the coming year potential online delivery; program laddering/linking with MENG, MPA, and MBA; and long term market growth and profit sharing.

Look forward to PAPM approval and implementation. Please contact me if further clarification or confirmation is required.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Kiera Ladner', followed by a long horizontal flourish.

Dr. Kiera Ladner, Ph.D.
CRC in Aboriginal Politics and Governance
Associate Professor and Acting Head Political Studies
University of Manitoba
524 Fletcher Argue Building | Winnipeg, MB | R3T 5V5
+1 204 474-6349 (ph) | +1 204 474-7585 (f)



UNIVERSITY
OF MANITOBA

Department of Mechanical
and Manufacturing Engineering

Winnipeg, Manitoba
Canada R3T 5V6
Telephone 204-474-9804
Fax 204-275-7507

May 28th, 2013

Dr. Dennis Silverstrone
Area Head, Continuing Studies
174A Extended Ed Complex
University of Manitoba
Winnipeg, MB R3T 2N2

Dear Dennis Silverstrone;

The Department of Mechanical and Manufacturing Engineering supports the creation of the Post-Baccalaureate Certificate in Aerospace Program Management (PAPM) and the program's inclusion of:

MECH 4170 Program Management and Systems Engineering: Aerospace Applications—provided by the Department of Mechanical and Manufacturing Engineering, the aim of this course is to introduce the fundamental concepts of program management and systems engineering as they pertain to building an aerospace system. It will examine the dynamics of managing the wide-ranging considerations, stakeholders, and activities involved in a complex development and design activity, and in the pursuit of system and cost optimization. Pre-requisite project management and OPM 4620 Production Management Seminar.

Support is subject to the following understandings:

- **Joint Program Governance**—given PAPM is an multi-unit initiative, it will be overseen by a Program Committee in which all the contributing units, including the Department of Mechanical Engineering, will be equally represented through committee membership;
- **Extended Education Program Administration**—overseen by the Program Committee, Extended Education will assume all PAPM promotion, recruitment, and delivery responsibilities, including the administration of all program revenues and costs. The Department of Mechanical Engineering will bear no costs, including instructor compensation, with respect to this program;
- **Retained Departmental Course Authority**—notwithstanding the above, the Department of Mechanical Engineering will retain final authority over the course content, delivery quality, and grade determination for MECH 4170 Selected Topics: Aerospace Industry Structure and Regulation;
- **Priority Course Registration**—PAPM students will be given priority registration for PAPM delivered courses followed by home-unit approved graduate and senior undergraduate students

from PAPM participating units. Registration requests beyond participating units will be considered thereafter, and in accordance with overall PAPM enrolment standards and individual course pre-requisite requirements; and

- **Outstanding Matters**—while currently premature to address and not reason for not proceeding forward with the PAPM proposal, the following are recognized matters that need to be deliberated on in the coming year potential online delivery; program laddering/linking with MENG, MPA, and MBA; and long term market growth and profit sharing.

Look forward to PAPM approval and implementation. Please contact me if further clarification or confirmation is required.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Kuhn', with a stylized flourish at the end.

David C.S. Kuhn, Ph.D., P.Eng., FCSME
Professor and Head
Department of Mechanical and Manufacturing Engineering
University of Manitoba

June 13, 2013

Dr. Dennis Silverstrone
Area Head, Continuing Studies
174A Extended Ed Complex
University of Manitoba
Winnipeg, MB R3T 2N2

Dear Dr. Silverstrone;

The Manitoba Aerospace Association (MAA) and the Manitoba Aerospace Human Resources Council (MAHRC) fully support the pending Post-Baccalaureate in Aerospace Systems Management (PAPM), and looks forward to its approval and implementation. The PAPM program promises to provide a valuable professional development venue for young aerospace professionals here in Manitoba.

A recently released aerospace review (the Emerson Report) funded by the Government Canada specifically noted the pressing need for professional up-skilling in the industry, particularly in the areas of program integration and systems engineering. The PAPM's proposed curriculum is well positioned to address an industry-wide education need. The PAPM also promises to bring together diverse aerospace interests—manufacturing, civil and military aviation, public regulators and academia—through its governance and administration, teaching cadre and attending students.

Manitoba Aerospace was made aware of the PAPM initiative last fall when solicited for industry observations and advice. It is great to see the initiative now pending approval and implementation, and we look forward to seeing it in action.

Please feel welcome to contact either of us if any further clarification or confirmation is required.

Sincerely



Ken Webb
Executive Director
Manitoba Aerospace Association



Wendell Wiebe
Executive Director and GM
Manitoba Aerospace Human Resources Council



UNIVERSITY
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Libraries

University of Manitoba Libraries

Statement for New Programme

Faculty Extended Education
Department Continuing Education

Name POST-BACCALAUREATE CERTIFICATE IN AEROSPACE
PROGRAM MANAGEMENT


Statement

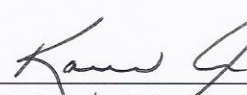
The Libraries' collection can support this new programme, as it currently exists.

The PAPM is composed of 5 mandatory 36-hour classroom courses, one elective course, and one three-day workshop in project management. The required courses are offered in Engineering, Arts, the Asper School of Business, and Extended Education. Required credit courses used are departmental topic courses and, as such, are not new and are presently supported by the Libraries. Courses will be delivered in and around the Winnipeg Airport, relying mainly on case studies. Students can draw on collections in several University of Manitoba Libraries including the Engineering Library; the Albert Cohen Management Library; and Elizabeth Dafoe Library (Air and Space Policy and History). Students will be permitted to use the collection at the Lewis Library of Aerospace Warfare, Canadian Forces School of Aerospace Studies as well. After speaking with Stephen James, the Executive Coordinator Aerospace Programs out of the Faculty of Graduate Studies, I understand that coursework centres on case studies and projects rather than on theoretical research. I am confident that print and electronic resources in place to support the existing courses will serve students in this programme very well.

Lyle Ford
Liaison Librarian for Extended Education

Nicole Michaud-Oystrik
Head, Elizabeth Dafoe Library


Coordinator, Collections Management


University Librarian

21 June 2013
Date

REPORT OF THE SENATE COMMITTEE ON AWARDS – PART A

Preamble

Terms of reference for the Senate Committee on Awards include the following responsibility:

On behalf of Senate, to approve and inform Senate of all new offers and amended offers of awards that meet the published guidelines presented to Senate on November 3, 1999, and as thereafter amended by Senate. Where, in the opinion of the Committee, acceptance is recommended for new offers and amended offers which do not meet the published guidelines or which otherwise appear to be discriminatory under the policy on the *Non-Acceptance of Discriminatory Awards*, such offers shall be submitted to Senate for approval. (Senate, October 7, 2009)

Observations

At its meeting of June 20, 2013 the Senate Committee on Awards approved eleven new offers and thirteen amended offers, and the withdrawal of one award, as set out in Appendix A of the *Report of the Senate Committee on Awards – Part A* (dated June 20, 2013).

Recommendations

On behalf of Senate, the Senate Committee on Awards recommends that the Board of Governors approve eleven new offers and thirteen amended offers, and the withdrawal of one award, as set out in Appendix A of the *Report of the Senate Committee on Awards – Part A* (dated June 20, 2013). These award decisions comply with the published guidelines of November 3, 1999, and are reported to Senate for information.

Respectfully submitted,

Dr. Phil Hultin
Chair, Senate Committee on Awards

SENATE COMMITTEE ON AWARDS

Appendix A June 20, 2013

1. NEW OFFERS

ACI Manitoba Chapter University of Manitoba Scholarship

The Manitoba Chapter of the American Concrete Institute (ACI) will contribute an annual gift of \$500 to the University of Manitoba to support a student studying Civil Engineering with an interest in concrete. Beginning in the 2013-2014 academic year, one scholarship valued at \$500 will be awarded to an undergraduate student who:

- (1) is enrolled full time in their third academic year in the Civil Engineering program in the Faculty of Engineering;
- (2) has achieved a minimum degree grade point average of 3.5;
- (3) has submitted an essay describing the applicant's past experience, intended career plans and how these plans relate to concrete (500 words maximum).

The selection committee shall be named by the Dean of the Faculty of Engineering (or designate) and shall include one representative from the Manitoba Chapter of the American Concrete Institute (ACI) and two members of the Department of Civil Engineering.

Bob Irving Athletic Scholarship

Corus Entertainment has made a five year commitment to the University of Manitoba to support an annual Bison Sports award. The donors will provide a gift of \$1,500 annually beginning in the 2013 academic year, and ending in the 2017 academic year. Matching funds may be provided through the Manitoba Scholarship and Bursary Initiative (MSBI) program. In any year that matching funds are made available through the MSBI, the scholarship will be valued at \$3,000. Each year, one scholarship at a minimum value of \$1,500 and a maximum value of \$3,000, will be offered to a student who:

- (1) is eligible to compete in Canadian Interuniversity Sport;
- (2) has completed at least one year of full-time study at the University of Manitoba, and in the previous academic session has completed at least 18 credit hours;
- (3) is enrolled full-time in the next ensuing academic session in any faculty or school at the University of Manitoba;
- (4) has achieved a minimum degree grade point average of 2.0.

The award will be offered to a student on a Bison Team that has been identified by the Athletic Director, following August 1 of each year, as the team that would benefit most from having this award presented to a student athlete on that team. Bison coaches are invited to submit a letter of application on why their team is in need of this award, as well as a letter of nomination for a student/athlete from their team who meets the criteria for this award and would receive the award if their team is chosen.

The selection committee shall be named by the Dean of the Faculty of Kinesiology and Recreation Management (or designate) and shall include the Athletic Director.

The terms of this award will be reviewed annually against the criteria of Canadian Interuniversity Sport governing "Athletic award – alumni, private, booster club and corporate funded", currently numbered C.6, Section IX in the C.I.S. Operations Manual.

Kanee Mauro Scholars Fellowship

With a commitment of a \$750,000 gift from Mr. and Mrs. Stephen Kanee, and matching contributions from the Manitoba Scholarship and Bursary Initiative, an endowment fund of \$1,200,000 will be established. The fund will be used to offer fellowships to Masters and PhD students enrolled in either the Joint M.A. Program in Peace and Conflict Studies or in the Ph.D. Program in Peace and Conflict Studies at the University of Manitoba, housed in the Arthur V. Mauro Centre for Peace and Justice at St. Paul's College. When the gift and matching funds have been fully realized, the fund will provide one fellowship, valued at \$25,000, to a PhD student, and two fellowships, valued at \$18,000 each, to Masters students. Starting with the 2013-2014 academic year, one award valued at the available annual interest of the fund, up to \$25,000, will be offered to a student who:

- (1) is enrolled full-time in the Faculty of Graduate Studies, in the Ph.D. Program in Peace and Conflict Studies;
- (2) has achieved a minimum cumulative grade point average of 3.0 (or equivalent) based on the last 60 credit hours of study;
- (3) demonstrates promise in the field of Peace and Conflict Studies based on their application for entrance into the Ph.D. Program in Peace and Conflict Studies, in the Faculty of Graduate Studies at the University of Manitoba as determined by the selection committee.

Commencing in 2015-2016, two fellowships valued at \$18,000 will be offered to students who:

- (1) are enrolled full-time in the Faculty of Graduate Studies, in the Joint M.A. Program in Peace & Conflict Studies;
- (2) have achieved a minimum cumulative grade point average of 3.0 (or equivalent) based on the last 60 credit hours;
- (3) demonstrate promise in the field of Peace & Conflict Studies based on their application package for entrance into the Joint M.A. program in Peace & Conflict Studies as determined by the selection committee.

The Dean of the Faculty of Graduate Studies (or designate) will ask the Director of the Peace and Conflict Studies Ph.D. program (or designate), typically the Director of the Arthur V. Mauro Centre for Peace and Justice, to name the selection committee for this award.

The Board of Governors of the University of Manitoba has the right to modify the terms of this award if, because of changed conditions, it becomes necessary to do so. Such modification shall conform as closely as possible to the expressed intention of the donor in establishing the award.

Master of Physician Assistant Studies: Capstone Project Graduation Prize

The Faculty of Graduate Studies at the University of Manitoba has established the Master of Physician Assistant Studies program. This program provides education to develop and train highly skilled healthcare professionals who will work as Physician Assistants. Revenue collected from various student payments, contract services, and fees, will contribute to annually funded awards for students enrolled in the Master of Physician Assistant Studies (MPAS) degree program. Beginning in the 2014-2015 academic year, a portion of this revenue will be used each year to award one prize valued at \$1,500, to a graduating student who:

- (1) is enrolled in the final year of the Masters of Physician Assistant Studies Program (MPAS) in the Faculty of Graduate Studies at the University of Manitoba;
- (2) will be graduating from the MPAS program in the year in which the prize is tenable;
- (3) has achieved outstanding academic performance with a minimum degree grade point average of 3.5, and is in good academic standing with the Faculty of Graduate Studies;
- (4) based upon the student's performance in the course entitled "PAEP 7350 Capstone", is chosen by

the selection committee as having the best overall performance.

The Dean of Graduate Studies (or designate) will ask the Director of the Office of Physician Assistant Studies to name the selection committee for this award.

Master of Physician Assistant Studies: Future of the Profession Graduation Prize

The Faculty of Graduate Studies at the University of Manitoba has established the Master of Physician Assistant Studies program. This program provides education to develop and train highly skilled healthcare professionals who will work as Physician Assistants. Revenue collected from various student payments, contract services, and fees, will contribute to annually funded awards for students enrolled in the Master of Physician Assistant Studies (MPAS) degree program. Beginning in the 2014-2015 academic year, a portion of this revenue will be used each year to award one prize valued at \$1,500, to a graduating student who:

- (1) is enrolled full-time in the Masters of Physician Assistant Studies Program (MPAS) in the Faculty of Graduate Studies at the University of Manitoba;
- (2) will be graduating from the MPAS program in the year in which the prize is tenable;
- (3) has achieved outstanding academic performance with a minimum degree grade point average of 3.5, and is in good academic standing with the Faculty of Graduate Studies;
- (4) is chosen by the selection committee as being the strongest advocate for the profession with respect to a combination of academic merit, and being the one who best promotes the profession.

The Dean of Graduate Studies (or designate) will ask the Director of the Physician Assistant Education Program to name the selection committee for this award.

Master of Physician Assistant Studies: Leadership Graduation Prize

The Faculty of Graduate Studies at the University of Manitoba has established the Master of Physician Assistant Studies program. This program provides education to develop and train highly skilled healthcare professionals who will work as Physician Assistants. Revenue collected from various student payments, contract services, and fees, will contribute to annually funded awards for students enrolled in the Master of Physician Assistant Studies (MPAS) degree program. Beginning in the 2014-2015 academic year, a portion of this revenue will be used each year to award one prize valued at \$1,500, to a graduating student who:

- (1) is enrolled full-time in the Masters of Physician Assistant Studies Program (MPAS) in the Faculty of Graduate Studies at the University of Manitoba;
- (2) will be graduating from the MPAS program in the year in which the prize is tenable;
- (3) has achieved outstanding academic performance with a minimum degree grade point average of 3.5, and is in good academic standing with the Faculty of Graduate Studies;
- (4) will be the student who most consistently demonstrates a high level of compassion, humanism and having the best patient-centered approach to care, as voted upon by their fellow students.

The Dean of Graduate Studies (or designate) will ask the Director of the Office of Physician Assistant Studies to name the selection committee for this award.

Master of Physician Assistant Studies: Travel Support Prize

The Faculty of Graduate Studies at the University of Manitoba has established the Master of Physician Assistant Studies program. This program provides education to develop and train highly skilled healthcare professionals who will work as Physician Assistants. Revenue collected from various student payments, contract services, and fees, will contribute to annually funded awards for students enrolled in the Master of Physician Assistant Studies (MPAS) degree program. The purpose of this fund is to offset

the travel costs of students taking part in a clinical rotation in rural and northern environments. Beginning in the 2014-2015 academic year, a portion of this revenue will be used each year to award twelve prizes valued at \$1,500 each, to graduate students who:

- (1) are enrolled full-time in the Master of Physician Assistant Studies Program (MPAS) in the Faculty of Graduate Studies at the University of Manitoba;
- (2) are enrolled in the clinical rotation elective within the Master of Physician Assistant Studies Program (MPAS) in the Faculty of Graduate Studies at the University of Manitoba;
- (3) will be taking part in a clinical rotation situated within a rural environment;
- (4) have achieved outstanding academic performance with a minimum degree grade point average of 3.5, and are in good academic standing with the Faculty of Graduate Studies.

The selection committee will have the discretion to determine the value of awards offered each year based on the available annual revenue.

The Dean of Graduate Studies (or designate) will ask the Director of the Office of Physician Assistant Studies to name the selection committee for this award.

Mike and Lesia Muzylowski Scholarships of Excellence

Mike and Lesia Muzylowski have established an endowment fund at the University of Manitoba with an initial gift of \$242,000 in 2011. Mike Muzylowski graduated with a degree in the Faculty of Science, majoring in Geological Sciences. The purpose of these scholarships is to recognize students with high academic achievement in either the Department of Geological Sciences in the Clayton H. Riddell Faculty of Environment, Earth, and Resources, or in the Faculty of Science. Beginning in the 2013-2014 academic year, the available annual interest from the fund will be used to offer one or more scholarships, with a minimum value of \$1,500 each, to undergraduate students who:

- (1) are registered full-time (minimum 80% course load) in their second, third, or fourth year in any honours or major degree program, offered by either the Department of Geological Sciences in the Clayton H. Riddell Faculty of Environment, Earth, and Resources, or offered by the Faculty of Science;
- (2) has achieved outstanding academic performance with a minimum degree grade point average of 3.75.

The selection committee will determine the number and value of the awards to be offered every year.

Whenever possible, the number of scholarships will be evenly divided between the Department of Geological Sciences and the Faculty of Science. In years when the scholarships cannot be evenly divided, the selection committee will have the discretion to distribute the scholarships in the manner they see fit.

The selection committee will be named by the Dean (or designate) of the Faculty of Science and will include equal representation from the Department of Geological Sciences.

Nellie McClung Foundation Bursary

The Nellie McClung Foundation has established a fund at The Winnipeg Foundation. The purpose of the bursary is to provide financial support to undergraduate students pursuing their studies in Women and Gender Studies with an interest in politics. Each year, The Winnipeg Foundation will report the available earnings from the fund to Financial Aid and Awards at the University of Manitoba. The available annual earnings from the fund will be used to offer a bursary to an undergraduate student who:

- (1) is enrolled full-time as an undergraduate student in the Faculty of Arts;
- (2) has declared a Major or Honours in Women and Gender Studies;

- (3) has taken one or more of the following courses from the Department of Political Studies: Gender and Politics in Canada (POLS 3100), Human Rights and Civil Liberties (POLS 3160), Feminist Political Theory (POLS 3240);
- (4) has achieved a minimum degree grade point average of 2.5;
- (5) has demonstrated financial need on the standard University of Manitoba bursary application form.

The Dean of the Faculty of Arts (or designate) will name the selection committee for this award.

University of Manitoba Retirees Association (UMRA) Bursary

The University of Manitoba Retirees Association (UMRA) has established an endowment fund at the University of Manitoba to offer the University of Manitoba Retirees Association (UMRA) Bursary. The purpose of the bursary is to offer support to students in achieving their educational objectives so they may make meaningful contributions to society following their graduation. The Manitoba Scholarship and Bursary Initiative has made a contribution to the fund. Each year, the available annual interest from the fund will be used to offer one or more bursaries to undergraduate and graduate students.

In order to be eligible for this bursary, undergraduate students must:

- (1) be Canadian citizens with a permanent mailing address in Manitoba;
- (2) have completed at least one year of full-time study (minimum 30 credit hours) in any faculty or school at the University of Manitoba;
- (3) be registered full-time (minimum 60% course load) in any school or faculty at the University of Manitoba;
- (4) have achieved a minimum degree grade point average of 2.5;
- (5) have demonstrated financial need on the standard University of Manitoba bursary application form.

In order to be eligible for this bursary, graduate students must:

- (1) be Canadian citizens with a permanent mailing address in Manitoba;
- (2) have completed at least one year of full-time study in the Faculty of Graduate Studies in any Master's or Doctoral program offered by any faculty or school at the University of Manitoba;
- (3) be registered full-time in the Faculty of Graduate Studies in any Master's or Doctoral program offered by any faculty or school at the University of Manitoba;
- (4) have achieved a minimum degree grade point average of 3.0;
- (5) have demonstrated financial need on the standard University of Manitoba bursary application form.

The bursaries will be offered each year to one or more students ensuring that all faculties and schools are equally represented over time. In order to ensure that students are selected evenly amongst the schools and faculties, there will be at least one and no more than two recipients selected from each in a fifteen year period.

The selection committee will have the discretion to determine the number and value of bursaries available each year based on the available revenue with the *provisos* that (a) the minimum value will be \$450 and (b) the maximum value will be equal to eighty percent (80%) of a recipient's tuition fees (not including ancillary and incidental fees).

The selection committee will be named by the Director, Financial Aid and Awards (or designate).

The Board of Governors of the University of Manitoba has the right to modify the terms of this award if, because of changed conditions, it becomes necessary to do so. Such modification shall conform as closely as possible to the expressed intention of the donor in establishing the award.

Wayne Fleming Legacy Athletic Scholarship

In honour of Wayne Fleming, a former player (1971-1976) and Head Coach (1980-1989) of the University of Manitoba Bison men's hockey team, the Fleming family has established an endowment fund with an initial gift of \$10,000 received in 2013. Friends and colleagues have also made contributions to this award. The Manitoba Scholarship and Bursary Initiative has made a contribution to this fund. The purpose of the award is to offer a scholarship to a student athlete on the Bison Men's Hockey team who best exemplifies Wayne's characteristics. The Fleming family made an additional contribution of \$1000 in 2013 which has been matched by the Manitoba Scholarship and Bursary Initiative Fund, to offer the first award in the 2013-2014 academic year. Beginning in 2014-2015 academic year, the available annual interest from the fund will be used to offer one or more scholarships to undergraduate students who:

- (1) are Canadian citizens or permanent residents;
- (2) are enrolled full-time (registered in a minimum of 9 credit hours per term) in any faculty of school at the University of Manitoba;
- (3) have demonstrated high academic achievement with a minimum sessional grade point average of 2.0 in the previous academic session, and is in good academic standing as determined by the University;
- (4) have demonstrated exceptional athletic ability, team leadership, strong work ethic, passion and dedication to the sport of hockey.

The selection committee will have the discretion to determine the number and the value of the awards offered each year based on the available revenue.

The Chair of the selection committee will be the Athletic Director (or designate) from the Faculty of Kinesiology and Recreation Management and will include the Head Coach of the Bison men's hockey team.

The Board of Governors of the University of Manitoba has the right to modify the terms of this award if, because of changed conditions, it becomes necessary to do so. Such modification shall conform as closely as possible to the expressed intention of the donor in establishing the award.

(The terms of this award will be reviewed annually against the Canadian Interuniversity Sport (CIS) criteria governing "University Academic Scholarships with an Athletic Component", currently numbered C.5 in the CIS Operations Manual).

2. AMENDMENTS

Manitoba Dental Association Entrance Bursary in Dental Hygiene

The following amendments have been made to the terms of reference for the Manitoba Dental Association Entrance Bursary in Dental Hygiene:

- The name of this award has been changed to *Manitoba Dental Association Bursary in Second Year Dental Hygiene*.
- The terms of reference have been re-formatted to conform to current wording and formatting.
- The value of the bursary has been increased from \$200 to \$500 each year.
- The bursary is now for students in the second year of the Dental Hygiene program rather than for students entering the program.
- The last sentence of the preamble now reads: "Each year, one bursary will be offered to an undergraduate student who:"
- The revised eligibility criteria now read:

- (1) is enrolled full-time (minimum 60% course load) in the second year of the Dental Hygiene program at the School of Dental Hygiene at the University of Manitoba;
- (2) has achieved a minimum degree grade point average of 2.5;
- (3) demonstrates financial need on the standard University of Manitoba bursary application form.
- The second, penultimate, and last paragraphs have all been removed.
- The description of the selection committee has been revised to read: “The selection committee will be named by the Director of the School of Dental Hygiene (or designate).”
- Several editorial changes have been made.

Manitoba Dental Association Gold Medal

The following amendments have been made to the terms of reference for the Manitoba Dental Association Gold Medal:

- The terms of reference have been re-formatted to conform to current wording and formatting.
- The revised eligibility criteria now read:
 - (1) attains the highest standing in course work completed in the final two years of the Dental Hygiene program in the School of Dental Hygiene at the University of Manitoba;
 - (2) has achieved a minimum degree grade point average of 3.5;
 - (3) was enrolled full-time (minimum 80% course load) in the final two years of the Dental Hygiene program.
- The description of the selection committee has been revised to read: “The selection committee will be named by the Director of the School of Dental Hygiene (or designate).”
- Several editorial changes have been made.

Manitoba Dental Association Prize

The following amendments have been made to the terms of reference for the Manitoba Dental Association Prize:

- The terms of reference have been re-formatted to conform to current wording and formatting.
- The value of the prize has been increased from \$225 to \$450 each year.
- The terms now specify that this prize is for students with the highest standing in the third year of the Diploma in Dental Hygiene at the School of Dentistry at the University of Manitoba.
- The following sentence has been added to the first paragraph: “Only students who completed a full-time course load (minimum 80% course load) in their third year will be considered for this prize.
- The description of the selection committee has been revised to read: “The selection committee will be named by the Director of the School of Dental Hygiene (or designate).”
- Several editorial changes have been made.

Manitoba Dental Association Scholarship

The following amendments have been made to the terms of reference for the Manitoba Dental Association Scholarship:

- The terms of reference have been re-formatted to conform to current wording and formatting.
- The value of the scholarship has been increased from \$300 to \$400 each year.
- Wording which states that this scholarship is for students in their third year of the Faculty of Dentistry has been deleted.

- The courses listed in the preamble have been deleted and have been listed eligibility criterion (3).
- The last sentence of the preamble now reads: “Each year, one scholarship will be offered to an undergraduate student who:”
- The revised eligibility criteria now read:
 - (1) enrolls full-time (minimum 80% course load) in the Doctor of Dental Medicine (D.M.D.) program at the University of Manitoba in the year in which this award is tenable;
 - (2) has achieved a minimum degree grade point average of 3.5;
 - (3) has achieved the highest standing in the following two courses: Pathology and Microbiology, Parts I and II (currently ORLB 2300 and ORLB 3300).
- A new paragraph outlining the tie-breaking mechanism has been added. It reads: “In the event that two or more students have achieved the same highest standing, the scholarship will be awarded to the student with the highest overall degree grade point average.
- A new paragraph describing the selection committee has been added. It reads: “The selection committee shall be the Awards Committee of the Faculty of Dentistry.”
- Several editorial changes have been made.

Manitoba Dental Association Scholarship in Dental Hygiene

The following amendments have been made to the terms of reference for the Manitoba Dental Association Scholarship in Dental Hygiene:

- The terms of reference have been re-formatted to conform to current wording and formatting.
- The value of the scholarship has been increased from \$225 to \$450 each year.
- The last sentence of the preamble now reads: “Each year, one scholarship will be offered to an undergraduate student who:”
- The revised eligibility criteria now read:
 - (1) is enrolled full-time (minimum 80% course load) in the third year of the Dental Hygiene program at the School of Dental Hygiene at the University of Manitoba;
 - (2) has achieved a minimum degree grade point average of 3.5;
 - (3) had the highest degree grade point average in the second year of the Dental Hygiene program.
- A new paragraph describing the selection committee has been added. It reads: “The selection committee will be named by the Director of the School of Dental Hygiene (or designate).”
- Several editorial changes have been made.

Manitoba Dental Association Undergraduate Bursary

The following amendments have been made to the terms of reference for the Manitoba Dental Association Undergraduate Bursary:

- The name of this award has been changed to *Manitoba Dental Association Undergraduate Bursary in Dental Hygiene*.
- The terms of reference have been re-formatted to conform to current wording and formatting.
- The value of the scholarship has been increased from \$200 to \$500 each year.
- In the first sentence of the preamble the word “first” has been replaced with “third” and the words ‘Dental Hygiene’ have been added.
- The last sentence of the preamble now reads: “Each year, one bursary will be offered to an undergraduate student who:”
- The revised eligibility criteria now read:

- (1) is enrolled full-time (60% course load) in the third year of the Dental Hygiene program at the School of Dental Hygiene at the University of Manitoba;
- (2) has achieved a minimum degree grade point average of 2.5;
- (3) demonstrates financial need on the standard University of Manitoba bursary application form.
- (4) The second, penultimate, and last paragraphs have all been removed.
- The second, penultimate, and last paragraphs have all been removed.
- The description of the selection committee has been revised to read: “The selection committee will be named by the Director of the School of Dental Hygiene (or designate).”
- Several editorial changes have been made.

Marc Hutlet Seeds Bursary – Diploma in Agriculture

The following amendments have been made to the terms of reference for the Marc Hutlet Seeds Bursary – Diploma in Agriculture:

- The reference to 2012-2013 has been revised to 2013-2014 in the first sentence of the preamble.
- An editorial change has been made in the first sentence of the preamble.

Mary Hamilton Johnston Memorial Bursary

The following amendments have been made to the terms of reference for the Mary Hamilton Johnston Memorial Bursary:

- Criterion (2) has been revised and now reads: “is enrolled as a full-time (minimum 60 percent course load) student in the Faculty of Social Work”
- A new criterion (3) has been added which reads: “has achieved a minimum degree grade point average of 2.5”
- Criteria (3) and (4) are now criteria (4) and (5).
- The sentence immediately following the eligibility criteria regarding income in excess of the value of the annual award has been deleted.
- Several editorial changes have been made.

Northern Sky Architecture Award for Environmental Stewardship

The following amendments have been made to the terms of reference for the Northern Sky Architecture Award for Environmental Stewardship:

- The name of this award has been changed to *Northern Sky Architecture Scholarship for Environmental Stewardship*.
- The value of the scholarship has been increased from \$500 to \$1,000 each year.
- The second sentence of the preamble has been revised and states that the donors have agreed to renew the scholarship for a second five-year term beginning in the 2013-2014 academic year.
- The description of the selection committee has been revised to read: “The Dean of the Faculty of Graduate Studies (or designate) will ask the Dean of the Faculty of Architecture (or designate) to name the selection committee for this award.”

Rabbi Dr. Moshe Stern Memorial Award

The following amendments have been made to the terms of reference for the Rabbi Dr. Moshe Stern Memorial Award:

- The name of this award has been changed to *Rabbi Dr. Moshe Stern Memorial Scholarship*.

- Criterion (4) has been revised and now reads: “has completed at least one course in Judaic Studies at the University of Manitoba.”
- The words “an in course or graduating student who enrolls” have been replaced with “enrolled part-time or full-time in any school or faculty”
- The words “Dean, Faculty of Arts (or designate)” have been replaced with “Director of Financial Aid and Awards (or designate)” in the first and second sentences of the selection committee paragraph.
- Several editorial changes have been made.

University of Manitoba Business School Foundation International Study Awards

The following amendments have been made to the terms of reference for the University of Manitoba Business School Foundation International Study Awards:

- The last two sentences of the preamble have been replaced with the following: “The purpose of this fund is to support students taking part in the I.H. Asper School of Business International Exchange program. Each year, the available income from the fund will be used to offer scholarships with a maximum value of \$1,500 each to undergraduate students who”
- In criterion (1) the reference to students being in the third year of the program has been deleted and the words “(minimum 80% course load)” have been added.
- The sentence immediately following the eligibility criteria has been revised and now reads: “Students will be ranked based on the following criteria:”
- Criterion (1) of the ranking criteria has been revised and now reads: “a minimum degree grade point average of 3.0 at the time of application”
- Criterion (2) of the ranking criteria has been revised and now reads: “a written statement of intent to pursue this program provided by the student (maximum 500 words)”
- Criterion (3) of the ranking criteria has been revised and now reads: “references letters from two University of Manitoba academic staff members and one professional/personal referee”
- Criterion (5) of the ranking criteria has been revised and now reads: “completion of a minimum 24 credit hours in the Bachelor of Commerce degree program”
- A new sentence has been added immediately following the numbered ranking criteria which reads: “The number and value of scholarships awarded each year will be at the discretion of the selection committee but shall not exceed \$1,500 each.”
- The description of the selection committee has been revised to read: “The selection committee will be named by the Director of the I.H. Asper School of Business International Student Exchange Program (or designate), who will also serve as Chair, and will include the Coordinator of the International Student Exchange Program (or a delegate).”
- Several editorial changes have been made.

Wawanesa Mutual Insurance Company Bursary

The following amendments have been made to the terms of reference for the Wawanesa Mutual Insurance Company Bursary:

- The second sentence of the preamble has been revised and states that the donors have agreed to renew the bursaries for a second five-year term beginning in the 2014-2015 academic year.

- The following sentence has been deleted from the preamble: “The donor will have the right to renew the commitment for successive five year terms exercisable during the fourth year of any five year term.”
- Several formatting changes have been made.

W.E. Muir Scholarship for Graduate Students in Biosystems Engineering

The following amendments have been made to the terms of reference for the W.E. Muir Scholarship for Graduate Students in Biosystems Engineering:

- The scholarship will now be offered to both a Master’s and a Ph.D student rather than to only one Master’s student. The Master’s student will receive forty percent of the available annual income whereas the Ph.D. student will receive sixty percent of the available annual income from the fund.
- Preference will be given to students working in the area of grain storage.
- Each year, one scholarship, valued at forty percent of the available income from the fund will be offered to a Master’s student who:
 - (1) is enrolled full-time in their first or second year in the Faculty of Graduate Studies, in the Master’s program, delivered by the Department of Biosystems Engineering;
 - (2) has achieved the highest degree grade point average in a minimum of four courses completed at the University of Manitoba, in the Master’s program.
- A new section outlining the eligibility criteria for Ph.D. students has been added which reads: Ph.D. Scholarship (60% of the total amount available to offer). One scholarship will be offered to a Ph.D student who:
 - (1) is enrolled full-time in their third or fourth year in the Faculty of Graduate Studies, in the Ph.D. program, delivered by the Department of Biosystems Engineering;
 - (2) has achieved the highest degree grade point average in a minimum of four courses completed at the University of Manitoba in the Ph.D. program;
 - (3) has completed a minimum of one written refereed scientific publication (published or accepted for publication) arising from research completed during the Ph.D. program at the University of Manitoba.
- The description of the selection committee has been revised to read: “The Dean of the Faculty of Graduate Studies (or designate) will ask the Chair of the Scholarships, Bursaries and Awards Committee of the Faculty of Engineering to convene the selection committee for this award.
- The standard Board of Governors paragraph has been added.
- Several formatting changes have been made.

3. WITHDRAWALS

Department of Psychiatry Award

The Head of the Department of Psychiatry has formally requested that this award be withdrawn and the remaining funds be transferred to another fund. The request to transfer the funds was been approved by Lance McKinley in Trust and Endowments and the fund balances for this award are now all \$0.

REPORT OF THE SENATE COMMITTEE ON AWARDS – PART A

Preamble

Terms of reference for the Senate Committee on Awards include the following responsibility:

On behalf of Senate, to approve and inform Senate of all new offers and amended offers of awards that meet the published guidelines presented to Senate on November 3, 1999, and as thereafter amended by Senate. Where, in the opinion of the Committee, acceptance is recommended for new offers and amended offers which do not meet the published guidelines or which otherwise appear to be discriminatory under the policy on the *Non-Acceptance of Discriminatory Scholarships, Bursaries or Fellowships*, such offers shall be submitted to Senate for approval. (Senate, April 5, 2000)

Observation

In an electronic poll conducted between July 31 - August 7, 2013, the Senate Committee on Awards approved one new offer and four amended offers, and the withdrawal of one award, as set out in Appendix A of the *Report of the Senate Committee on Awards – Part A* (dated August 7, 2013).

Recommendation

The Senate Committee on Awards recommends that the Board of Governors approve one new offer and four amended offers, and the withdrawal of one award, as set out in Appendix A of the *Report of the Senate Committee on Awards – Part A* (dated August 7, 2013). This award decision complies with the published guidelines of November 3, 1999, and is reported to Senate for information.

Respectfully submitted,

Dr. Phil Hultin
Chair, Senate Committee on Awards

MEETING OF THE SENATE COMMITTEE ON AWARDS

Appendix A August 7, 2013

1. NEW OFFERS

Shearer Bursary

Elizabeth Shearer and Mary Widdows Shearer (B.Sc.H.Ec/43) have established an endowment fund at the University of Manitoba with an initial gift of \$20,000 in 2013. The Manitoba Scholarship and Bursary Initiative has made a contribution to the fund. The bursary is in honour of Mary Widdows Shearer and David Shearer (B.Sc (M.E.)/56). David Shearer performed as a professional musician for many years playing jazz and classical woodwinds. The purpose of the fund is to provide financial support to students studying woodwinds in the Marcel A. Desautels Faculty of Music. The donors have set aside a portion of their initial gift to offer one bursary valued at \$2,000 in the 2013-2014 academic year. Beginning in the 2014-2015 academic year, the available annual interest from the fund will be used to offer one bursary to an undergraduate student who:

- (1) is enrolled full-time in the Marcel A. Desautels Faculty of Music;
- (2) has achieved a minimum degree grade point average of 2.5;
- (3) is studying jazz or classical woodwinds with preference given to students studying clarinet, bassoon, or saxophone;
- (4) has demonstrated financial need on the standard University of Manitoba bursary application form.

Preference will be given to a student who intends to pursue a focus in performance.

In any year there is no eligible candidate, the revenue from the fund will be re-capitalized.

The selection committee will be the Scholarship and Awards Committee of the Marcel A. Desautels Faculty of Music.

The Board of Governors of the University of Manitoba has the right to modify the terms of this award if, because of changed conditions, it becomes necessary to do so. Such modification shall conform as closely as possible to the expressed intention of the donor in establishing the award.

2. AMENDMENTS

Arthritis Society Bursary in Physical Therapy

The following amendments have been made to the terms of reference for the Arthritis Society Bursary in Physical Therapy:

- This award was amended because the undergraduate Physical Therapy program at the School of Medical Rehabilitation is no longer offered. In its place is a new two year Master of Physical Therapy program. As of September 2013, the first cohort of the Master of Physical Therapy program will be starting the first ever second year offered by the Master of Physical Therapy program.
- The first sentence of the preamble has been revised and now reads: "The Arthritis Society, Manitoba Division, offers to provide an annual bursary of \$1,500 to be awarded to a Physical Therapy student at the University of Manitoba who:"
- Criterion (1) has been revised and now reads: "is enrolled full-time in the Faculty of Graduate Studies, in the second year of study in the Master of Physical Therapy program."
- Criterion (2) has been revised and now reads: "has achieved a minimum degree grade point average of 3.0 in the first year of the Master of Physical Therapy program"

- The section describing the award offering for 2004-2005 has been deleted.
- The description of the selection committee has been revised to read: “The Chair of the School of Medical Rehabilitation Awards Committee will name the selection committee for this award.”

Edward R. Toporeck Graduate Fellowship in Engineering

The following amendments have been made to the terms of reference for the Edward R. Toporeck Graduate Fellowship in Engineering:

- The terms of reference have been re-formatted to conform to current wording and formatting.
- All biographical information from the preamble has been removed from the terms of reference and will appear in a separate section following the terms of reference under the heading “Biographical Information.”
- The MSBI statement is now the second sentence in the preamble.
- The last sentence of the preamble now reads: “Each year, the available interest from the fund will be used to offer one or more scholarships to graduate students who:”
- The revised eligibility criteria now read:
 - (1) are enrolled full-time in the Faculty of Graduate Studies in any doctoral program offered by the Faculty of Engineering at the University of Manitoba;
 - (2) have achieved a minimum degree grade point average of 3.5.
- The following one sentence paragraphs have been added immediately following the eligibility criteria: “Preference will be given to students who have not previously held this award” and “The selection committee will have the discretion to determine the number and value of awards each year.”
- The second last paragraph has been significantly revised and is now one sentence which reads: “Applicants will be required to submit their curriculum vitae and an outline of their research plans and goals.”
- The description of the selection committee has been revised to read: “The Dean of the Faculty of Graduate Studies (or designate) will ask the Chair of the Scholarships, Bursaries, and Awards Committee of the Faculty of Engineering to convene the selection committee for the graduate student scholarships.”
- Several editorial changes have been made.

John (Jack) MacDonald Lederman & John MacDonell Bursary

The following amendments have been made to the terms of reference for the John (Jack) MacDonald Lederman & John MacDonell Bursary:

- Criterion (4) has been added which reads: “has demonstrated financial need on the standard University of Manitoba bursary application form.

Walker Wood Foundation Bursary for Science

The following amendments have been made to the terms of reference for the Walker Wood Foundation Bursary for Science:

- The name of this award has been changed to *Walker Wood Foundation Bursaries for Science*.
- The value of the bursary has been increased from \$4,000 to \$8,000 each year. The number of bursaries offered each year has also been increased from one to two.
- The second sentence of the preamble has been revised and states that the donors have agreed to renew the scholarship for a three-year term ending in the 2015-2016 academic year.

- The last sentence of the preamble has been revised and now reads: “Beginning in the 2013-2014 academic session, two bursaries, each valued at \$4,000, will be offered to undergraduate students who”
- Several editorial changes have been made.

WITHDRAWALS

Olga Anderson Bursaries

This award was a one-time gift in support of two bursaries to be offered in 2012-2013 only. The bursaries have now been disbursed and the conditions of the terms of reference have been met.

August 1, 2013

**Report of the of the Implementation Working Group for the Cooper Commission
Report regarding Guidelines for Developing Bona Fide Academic Requirements
for Programs**

Preamble

1. The Implementation Working Group for the Cooper Commission Report (the “Working Group”) was established by the Senate Executive Committee on May 2, 2012.
2. The terms of reference for the working group are:
 - a. to establish a detailed plan for the implementation of the Cooper Commission recommendations;
 - b. to delegate tasks and establish groups to develop the necessary policies, processes and activities to meet the recommendations;
 - c. to research and encourage the incorporation of work done at other similar institutions in the areas identified in the recommendations;
 - d. to provide bi-monthly reports to Senate Executive and Senate on the progress of implementation;
 - e. to propose timelines for the implementation of Cooper Commission recommendations.
3. The Committee has met since the spring of 2012 to facilitate the implementation of the recommendations in the Cooper Commission report.

Observations

1. The Cooper Commission Report made two recommendations with respect to what the working group has grouped under the broad area of “Standards Identification”:
 - a. that where academic programs are subject to external accreditation or approval, a document outlining essential skills and abilities be developed and submitted for approval by Senate; the content of this document should be congruent with the requirements outlined by the respective registering college or approval body (e.g., College of Registered Nurses of Manitoba; College of Physicians and Surgeons of Manitoba).
 - b. that Senate require each unit to identify and submit to Senate for approval written rationales for the *bona fide* academic requirements of its existing programs and of any newly developed programs.
2. The Working Group established a sub-committee to determine and make recommendations on how these recommendations might be implemented. The sub-committee, led by Dean Jeff Taylor, has drafted two documents for Senate review – one for programs subject to external accreditation and one for all other programs. At this point, these reports are being submitted to Senate for discussion and comment.
3. With respect to the document on Developing *Bona Fide* Academic Requirements for Programs Subject to External Accreditation, it is the

working groups desire to bring this forward to the September, 2013 Senate meeting for discussion and comment and to bring forward a final document for approval by Senate in October, 2013.

4. With respect to the document on Developing *Bona Fide* Academic Requirements for Programs not Subject to External Accreditation, it is the working groups desire to bring this forward to the September, 2013 Senate meeting for discussion and comment. Following this, the Centre for the Advancement of Teaching and Learning will pilot this process with three volunteer programs over the fall/winter. After considering the experience of the pilot programs, the Working Group will then bring forward a recommendation to Senate for the approval of a process in the spring of 2014.
5. We would like to thank the members of the sub-committee for their work to date.

Respectfully submitted,

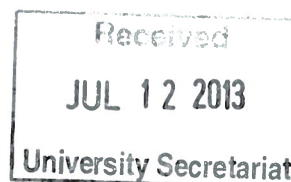
Dr. Lynn Smith and Mr. Jeff Leclerc, co-chairs
Implementation Working Group

Working Group membership: Dr. Joanna Asadoorian, Ms Carolyn Christie, Dr. Archie Cooper, Mr. Greg Juliano, Dr. Jeff Taylor, Dr. Mark Torchia, and Ms. Brandy Usick.



UNIVERSITY
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DATE: 9 July 2013

TO: Dr. David Barnard, Chair, University of Manitoba Senate

FROM: Jeff Taylor, Chair, BFAR/Essential Skills Subcommittee of the Cooper Commission Implementation Working Group 

SUBJECT: Developing *Bona Fide* Academic Requirements for Programs Subject to External Accreditation

One of the recommendations of the *ad hoc* Committee of Senate Executive to Examine Accommodation of Students with Disabilities and Governance Procedures Related to Academic Requirements (the "Cooper Commission") was "that where academic programs are subject to external accreditation or approval, a document outlining essential skills and abilities be developed and submitted for approval by Senate; the content of this document should be congruent with the requirements outlined by the respective registering college or approval body (e.g. College of Registered Nurses of Manitoba; College of Physicians and Surgeons of Manitoba)."¹ Senate, at its April 2012 meeting, approved the Report of the Cooper Commission in principle and referred the Report back to Senate Executive to oversee the development of a detailed plan to implement the recommendations contained within the Report. Senate Executive subsequently struck the Cooper Commission Implementation Working Group to develop the detailed implementation plan.

The Implementation Working Group, in turn, struck a BFAR/Essential Skills subcommittee to craft processes for the development of essential skills and abilities requirements, where programs are subject to external accreditation, and *bona fide* academic requirements and rationales for all other programs. The attached document outlines the proposed process for the development of essential skills and abilities requirements for programs subject to external accreditation. It is provided to Senate for information and comment at its September 2013 meeting and will be submitted to Senate for approval at its October 2013 meeting.

¹ This is recommendation (b) based on Observation 4c in the Cooper Commission report.

The members of the *Bona Fide* Academic Requirements/Essential Skills subcommittee of the Implementation Working Group are:

Jeff Taylor, Arts, Chair

Terri Ashcroft, Nursing

Joanne Hamilton, Medicine

Archie McNichol, Graduate Studies

Semone Myrie, Human Ecology

Rob Renaud, Education

Mark Torchia, Centre for the Advancement of Teaching and Learning

Developing Essential Skills and Abilities Requirements for Programs Subject to External Accreditation

Introduction

The University of Manitoba is required to make reasonable efforts to accommodate a student with a disability when the disability does not impair the student's ability to fulfill the essential requirements of a course or program. One of the recommendations of the *ad hoc Committee of Senate Executive to Examine Accommodation of Students with Disabilities and Governance Procedures Related to Academic Requirements* (the "Cooper Commission") was "that where academic programs are subject to external accreditation or approval, a document outlining essential skills and abilities be developed and submitted for approval by Senate; the content of this document should be congruent with the requirements outlined by the respective registering college or approval body (e.g. College of Registered Nurses of Manitoba; College of Physicians and Surgeons of Manitoba)."¹ Senate, at its April 2012 meeting, approved the Report of the Cooper Commission in principle and referred the Report back to Senate Executive to oversee the development of a detailed plan to implement the recommendations contained within the Report. The purpose of this document is to outline the steps to be followed in developing essential skills and abilities requirements for academic programs that are subject to external accreditation.

The phrase "subject to external accreditation" is being interpreted and applied as follows for the purposes of this exercise. If a regulatory body accredits your program and that body has its own essential skills and abilities document or expects that you will have one, you are required to develop an essential skills and abilities document for submission to Senate for approval. All other externally accredited programs shall choose to develop either an essential skills document or a *bona fide* academic requirements document. The steps to be followed in developing *bona fide* academic requirements for programs are contained in the document entitled "Developing *Bona Fide* Academic Requirements for Programs not Subject to External Accreditation."

There are four steps in the development of essential skills and abilities requirements for programs that are subject to external accreditation.

1. Develop skills and abilities criteria
2. Discuss and analyze skills and abilities criteria
3. Follow any Faculty-specific procedures for the review of essential skills and abilities requirements
4. Submit the essential skills and abilities requirements to the University Secretary's office for review by the appropriate Senate committees and Senate

¹ This is recommendation (b) based on Observation 4c in the Cooper Commission report.

Definitions

Unit: Unit means the academic unit that has immediate and primary responsibility for the administration of courses and programs. This will normally be a department or equivalent unit in a departmentalized Faculty and the Faculty in a non-departmentalized Faculty.

Undergraduate Programs: In the case of undergraduate degrees that do not have sub-specializations, programs are defined as the degree-level credential (Doctor of Dental Medicine, for example). In the case of undergraduate degrees that have sub-specializations, such as Engineering, programs are defined as each of the specific sub-specializations in a degree (Civil Engineering, for example). Other undergraduate programs include diploma programs such as the School of Dental Hygiene's Diploma in Dental Hygiene.

Graduate programs: Graduate programs are defined as post-baccalaureate degree, diploma, certificate, and other credentials in specific disciplinary or interdisciplinary subject areas. For example, the Faculty of Medicine will have to develop essential skills and abilities requirements for its Post-Graduate Medical Education program.

Developing Essential Skills and Abilities Criteria²

Skills and abilities criteria describe what learners may be expected to do during the program. This includes cognitive, affective and psychomotor skills and abilities.

Reasons for Skills and Abilities Criteria

- To provide students with the means to organize their efforts toward accomplishing the desired behaviours.
- To provide information to prospective students so they can make an informed choice regarding applying to a program
- To provide prospective and current students information to help them decide if they should register with Student Accessibility Services
- To help students, Student Accessibility Advisors and Faculty develop reasonable accommodation
- To protect the public

Components of essential skills and ability criteria

Resources for developing essential skills and abilities criteria include essential skills lists from the regulatory body with which program graduates register. Educators should also consider end-of-program objectives. It may be helpful to gather the skills and abilities under broad categories. Using the ABCD model can be useful in writing clear criteria.

² Adapted from San Diego University's *Understanding Objectives* at <http://edweb.sdsu.edu/courses/EDTEC540/objectives/ObjectivesHome>.

Model - The ABCD's of Learning Objectives includes four characteristics that help an objective communicate intent:

Audience - Who will be doing the behaviour?

Behavior - What should the learner be able to do?

Condition - Under what conditions do you want the learner to be able to do it?

Degree - How well must it be done?

Audience

Identify the learner (not the instructor).

Behaviour (Performance)

What the learner will be able to do - it must be something that can be measured.

Condition

The conditions under which the learners must demonstrate their mastery of the objective:

What will the learners be allowed to use? What won't the learners be allowed to use?

Degree (or criterion)

How well the behaviour must be done: Common degrees include: Speed, Accuracy, Quality

To create an essential skill and ability criteria, start with an action verb, followed by a statement specifying what is to be demonstrated, and finally a statement to give it context and to identify a standard for acceptable performance.

Be specific and unambiguous. Terms such as know, understand, learn, appreciate, and “to be aware of” should be avoided. The specific level of achievement should be clearly identified.

Focus on observable student performance that is capable of being assessed. It is often helpful to add the preposition “by” or “through” followed by a statement which clearly states how the learning objectives will be assessed.

Action Verbs

Action verbs help to align objectives to an observable behaviour. The following resource provides a good list of action verbs that are effective.

Education Oasis, *Action Verbs for Lesson Objectives*

<http://www.clemson.edu/assessment/assessmentpractices/referencematerials/documents/Blooms%20Taxonomy%20Action%20Verbs.pdf>

Examples of Essential Skills and Abilities Criteria using the ABCD Model

Cognition

A student must demonstrate higher level cognitive abilities necessary to measure, calculate and reason in order to conceptualize, analyze, integrate and synthesize information.

Communication

A student must be able to speak, hear, read, write and comprehend English to a level to avoid confusion of words and meaning and to effectively elicit and convey information.

Motor/tactile function

A student must possess sufficient motor function to develop the skills required to safely perform a physical examination of a patient, including palpation, auscultation, percussion or other diagnostic maneuvers. A student must be able to use common diagnostic equipment (stethoscope, otoscope) either directly or in an adaptive form.

Professionalism

A student must consistently display integrity, honesty, empathy, compassion, fairness and respect for others. The student must be able to tolerate physical, emotional and mental demands of the program and function safely and effectively under stress.

Discuss and Analyze Essential Skills and Abilities Criteria

Questions to ask: What is the specific knowledge or skill that is required (essential) if the criteria are to be met? “Essential” can be defined by two criteria:

1. The skill (or knowledge) must be demonstrated to meet the objectives of the course and program; and
2. The skill (or knowledge) must be demonstrated in a prescribed manner

Think about what is non-negotiable and absolutely necessary and why. If we are clear about what is being taught and why it must be done in a prescribed way, it is easier to find solutions for the needs of students with disabilities.

Support Available to Units and Faculty Members to Assist Them in Developing Essential Skills and Abilities Requirements

Sufficient and appropriate resources will be available through the Centre for the Advancement of Teaching and Learning (CATL) to assist academic units develop essential skills and abilities requirements. Units will receive a specific timeline for the development of their essential skills and abilities requirements after Senate approves the process outlined in this document. In addition, a CATL Educational Specialist will contact units to determine the level of assistance

that will be required. At a minimum, units will be expected to submit draft essential skills and abilities requirements to CATL for review and comment.

The goal is to complete the development essential skills and abilities requirements for all existing courses and programs by Fall 2015.

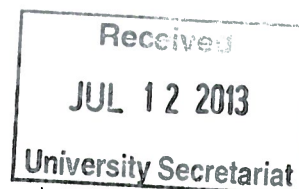
Maintaining Essential Skills and Abilities Requirements

A recommendation will be made to the Senate Committee on Academic Review that the *Academic Program Reviews Procedures* be amended to include a provision that essential skills and abilities requirements be reviewed and updated during the regular program review process.



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Email jeff_taylor@umanitoba.ca

DATE: 9 July 2013

TO: Dr. David Barnard, Chair, University of Manitoba Senate

FROM: Jeff Taylor, Chair, BFAR/Essential Skills Subcommittee of the Cooper Commission Implementation Working Group 

SUBJECT: Developing *Bona Fide* Academic Requirements for Programs not Subject to External Accreditation

One of the recommendations of the *ad hoc* Committee of Senate Executive to Examine Accommodation of Students with Disabilities and Governance Procedures Related to Academic Requirements (the "Cooper Commission") was "that Senate require each unit to identify and submit to Senate for approval written rationales for the *bona fide* academic requirements of its existing programs and of any newly developed programs."¹ This requirement applies to all academic programs that are not subject to external accreditation. Senate, at its April 2012 meeting, approved the Report of the Cooper Commission in principle and referred the Report back to Senate Executive to oversee the development of a detailed plan to implement the recommendations contained within the Report. Senate Executive subsequently struck the Cooper Commission Implementation Working Group to develop the detailed implementation plan.

The Implementation Working Group, in turn, struck a subcommittee to craft processes for the development of essential skills and abilities requirements, where programs are subject to external accreditation, and *bona fide* academic requirements and rationales for all other programs. The attached document outlines the proposed process for the development of *bona fide* academic requirements for programs that are not subject to external accreditation. It is provided to Senate for information and comment at its September 2013 meeting.

The Centre for the Advancement of Teaching and Learning will work with four volunteer programs during the fall of 2013 to pilot the process outlined in this document. Lessons learned in the pilot will

¹ This is recommendation (c) based on Observation 4c in the Cooper Commission report.

inform the drafting of a final document specifying the process for the development of *bona fide* academic requirements for programs not subject to external accreditation. It is hoped that a draft of the final document will be brought to the February 2014 Senate meeting for information and comment and to the March 2014 Senate meeting for approval.

The members of the *Bona Fide* Academic Requirements/Essential Skills subcommittee of the Implementation Working Group are:

Jeff Taylor, Arts, Chair
Terri Ashcroft, Nursing
Joanne Hamilton, Medicine
Archie McNichol, Graduate Studies
Semone Myrie, Human Ecology
Rob Renaud, Education
Mark Torchia, Centre for the Advancement of Teaching and Learning

Developing *Bona Fide* Academic Requirements for Programs not Subject to External Accreditation (Senate Document)

Introduction

The University of Manitoba is required to make reasonable efforts to accommodate a student with a disability when the disability does not impair the student's ability to fulfill the essential requirements of a course or program. One of the recommendations of the *ad hoc* Committee of Senate Executive to Examine Accommodation of Students with Disabilities and Governance Procedures Related to Academic Requirements (the "Cooper Commission") was "that Senate require each unit to identify and submit to Senate for approval written rationales for the *bona fide* academic requirements of its existing programs and of any newly developed programs."¹ This requirement applies to all academic programs that are not subject to external accreditation.² Senate, at its April 2012 meeting, approved the Report of the Cooper Commission in principle and referred the Report back to Senate Executive to oversee the development of a detailed plan to implement the recommendations contained within the Report. The purpose of this document is to outline the steps to be followed in developing *bona fide* academic requirements (BFARs) for academic programs that are not subject to external accreditation.

The goal of this exercise is to develop specific descriptors that facilitate a clear understanding of the expected outcomes and essential requirements of courses and programs. Its purpose is not to circumvent the instructors' role in determining what students should be learning from a course or program, how students are assessed on that learning, or the methodologies used in teaching. It is the responsibility of faculty members to determine how expected outcomes and essential requirements are achieved in specific courses and programs.

¹ This is recommendation (c) based on Observation 4c in the Cooper Commission report.

² Programs that are subject to external accreditation must submit essential skills and abilities documents to Senate for approval. The phrase "subject to external accreditation" is being interpreted and applied as follows for the purposes of this exercise. If a regulatory body accredits your program and that body has its own essential skills and abilities document or expects that you will have one, you are required to develop an essential skills and abilities document for submission to Senate for approval. All other externally accredited programs may choose to develop either an essential skills document or a *bona fide* academic requirements document. Further information on the development and submission of essential skills and abilities documents is available in the document entitled "Developing Essential Skills and Abilities Requirements for Programs Subject to External Accreditation."

Definitions

Learning Outcomes: Learning outcomes describe the knowledge and skills that a student *should* acquire by completing a course or program. They focus on the application and integration of course and program content from a student's perspective.

Bona Fide Academic Requirements: BFARs describe the knowledge and skills that a student *must* acquire in order to successfully complete a course or program. These are the essential and minimum requirements, including methods of assessment, that the student must meet.

Unit: Unit means the academic unit that has immediate and primary responsibility for the administration of courses and programs. This will normally be a department or equivalent unit in a departmentalized Faculty and the Faculty in a non-departmentalized Faculty.

Undergraduate Programs: In the case of undergraduate degrees or diplomas that do not have sub-specializations, programs are defined as the degree- or diploma-level credential (the Bachelor of Physical Education or the Diploma in Agriculture, for example). In the case of undergraduate degrees that have sub-specializations, such as the Bachelor of Arts, programs are defined as, first, each of the specific sub-specializations in a degree (Psychology, for example) and, second, each of the options that exist within that sub-specialization. For example, the Department of Economics, as the unit responsible for the delivery of Economics programs, will develop learning outcomes and BFARS for each of its general (major), minor, honours, and advanced major options in the Bachelor of Arts in Economics.

Graduate programs: Graduate programs are defined as post-graduate credentials in specific disciplinary or interdisciplinary subject areas. The Asper School of Business, for example, will develop learning outcomes and BFARS for its Master of Business Administration, Master of Science, and Ph.D. programs.

Two Paths to *Bona Fide* Academic Requirements for Academic Programs

There are two possible paths to developing *bona fide* academic requirements for academic programs. One path is to first develop course-based learning outcomes before developing program-based learning outcomes and course and program BFARs. Another path is to first develop program-based learning outcomes before developing course-based learning outcomes and program and course BFARs. Units will choose the path that is most appropriate for their specific programs, with advice from the Centre for the Advancement of Teaching and Learning. Regardless of the path chosen, units will have to ensure that their program and course BFARs and rationales are clearly specified.

From Courses to Programs

If you arrive at your program BFARs by starting with the courses that form part of your program, you follow the following six steps:

1. Develop learning outcomes for each course that your unit offers
2. Develop learning outcomes for each program that your unit offers
3. Develop BFARs and rationales for each course that your unit offers
4. Develop BFARs and rationales for each program that a your unit offers
5. Follow any Faculty-specific procedures for the review of learning outcomes and BFARs
6. Submit the course and program BFARs and rationales to the University Secretary's office for review by the appropriate Senate committees and Senate

From Programs to Courses with Course Learning Outcomes

If you arrive at your program BFARs by starting at the program level and then moving to develop learning outcomes and BFARS for the courses that form part of your program, you follow the following six steps:

1. Develop learning outcomes for each program that your unit offers
2. Develop learning outcomes for each course that your unit offers
3. Develop BFARs and rationales for each program that your unit offers
4. Develop BFARs and rationales for each course that a your unit offers
5. Follow any Faculty-specific procedures for the review of learning outcomes and BFARs
6. Submit the course and program BFARs and rationales to the University Secretary's office for review by the appropriate Senate committees and Senate

Developing Learning Outcomes³

As you begin this exercise, you will identify the content, skills and values that might take place in a course or program and for which learning outcomes might be developed.⁴

Content refers to the disciplinary information covered in the course or program, skills are the general and specific skills students should have by the end of the course or program, and values refer to the attitude or beliefs that might be imparted or investigated as part of the course or program.

Good learning outcomes are specific and use active language, are focused on the learner, are realistic rather than aspirational, focus on the application and integration of acquired knowledge and skills, indicate useful modes of assessment and the specific elements that will be assessed, and offer a timeline for completion.

Learning outcomes assist students to understand the conditions and goals of assessment and to draw connections across courses, programs and other kinds of knowledge in their formal and informal learning. Furthermore, learning outcomes help instructors reflect on the course or program content and its potential applications, craft appropriate methods of assessment, and develop BFARs and accompanying rationales.

Developing BFARs

Once you have developed learning outcomes for courses and programs, you will turn your attention to the development of BFARs and their rationales. In doing so, you will ask:

- What specific knowledge or skills are required (essential) among the learning outcomes for the course or program?
- Are the assessment methods for this course essential in order for the student to exhibit sufficient mastery of the course's learning outcomes to successfully complete the course?

“Essential” can be defined by two criteria:

³ The material in this section is excerpted and adapted from the University of Toronto Centre for Teaching Support and Innovation's "Developing Learning Outcomes: A Guide for Faculty," which is used with permission and is available in full at <http://www.teaching.utoronto.ca/topics/coursedesign/learning-outcomes.htm>.

⁴ There are three common theoretical approaches to the development of learning objectives and outcomes. The *behavioural* approach is consistent with behavioural perspectives on learning and with teacher-centred instructional styles. The *cognitive* approach is consistent with cognitive perspectives on learning and emphasizes teaching and learning knowledge and concepts. The *constructivist* approach, finally, is consistent with constructivism and situated learning frameworks and is more likely to accompany student-centred approaches to learning. The learning outcomes for a particular course or program will be informed by one, two, or all three of these approaches.

1. The skill (or knowledge) must be demonstrated in order for the student to successfully complete a course or program; and
2. The skill (or knowledge) must be demonstrated in a prescribed manner.

In developing BFARs, you will think about what is non-negotiable and absolutely necessary and why in the course or program. If we are clear about what is being taught and why it must be done in a prescribed way, it is easier to find solutions for the needs of students with disabilities.

For example, you may have identified the following learning outcomes for a specific course.

By the end of this course, students will be able to:

- acquire hands-on experience with the newest digital tools and technologies for scholarly, research, production and dissemination
- express the key concepts and methodologies of the Digital Humanities
- demonstrate a strong working relationship of the discourse and debate that constitute the Digital Humanities
- discuss, analyze, and interrogate a broad range of relevant theories and projects

Some essential academic requirements that accompany these learning outcomes might be:

- demonstrate the ability to read and comprehend humanities literature written in English and to write English in a grammatically correct manner, and to communicate orally in a seminar discussion and in oral presentation
- demonstrate the ability to comprehend presentations in English and to communicate orally in English in seminar discussion and in oral presentation

Support Available to Units and Faculty Members to Assist Them in Developing Learning Outcomes and BFARs

Sufficient and appropriate resources will be available through the Centre for the Advancement of Teaching and Learning (CATL) to assist academic units develop learning outcomes and BFARs. Units will receive a specific timeline for the development of their course and program BFARs after Senate approves the process outlined in this document. In addition, a CATL Educational Specialist will contact units to determine the level of assistance that will be required. At a minimum, units will be expected to submit draft course and program learning outcomes and BFARs to CATL for review and comment.

The goal is to complete the development of learning outcomes and BFARs for all existing courses and programs by Fall 2015.

Maintaining Learning Outcomes and BFARS

A recommendation will be made to the Senate Committee on Academic Review that the *Academic Program Reviews Procedures* be amended to include a provision that learning outcomes and BFARs be reviewed and updated during the regular program review process.

Dr. Norman Frohlich – 1941-2013

Norman (Norm) Frohlich was born in Winnipeg and received his Bachelor's degree in Mathematics from the University of Manitoba. He went on to receive his Master's in Mathematics from Rutgers and a PhD in Political Science from Princeton University.

Norm was a man who cared deeply about people and ideas. Norm joined the I.H. Asper School of Business (then known as the Faculty of Administrative Studies) in the Department of Public Policy as an Associate Professor on July 1, 1980. He served as Department Head from July 1, 1982 to December 31, 1989 at which time the Department of Public Policy merged with the Department of Business Administration. Prior to joining the I.H. Asper School of Business, Norm worked in the Government Department at the University of Texas.

Norm published in leading journals in a variety of disciplines including Political Science, Management, Economics and Health Policy. He had numerous refereed journal articles, including several in the top journals in their respective fields: *Administrative Science Quarterly*, *American Political Science Review*, and *Social Science and Medicine*. One of his articles in *Public Choice* was awarded the 1996 Duncan Black Prize for the best article in the journal. He co-authored (with Professor Joe Oppenheimer) several influential books including *Choosing Justice: An Experimental Approach to Ethical Theory* (1992). This book is considered a foundational work in the field of experimental philosophy. He wrote two other influential books: *Modern Political Economy* (1978) and *Political Leadership and Collective Goods* (1972) (with third co-author, Oran Young). The latter book was chosen as one of the outstanding academic books of 1972 by Choice Books for College libraries.

Throughout his career, Norm was a prolific and outstanding researcher, and a dedicated teacher. He was well-respected by his colleagues who unanimously supported his nomination as Professor Emeritus prior to his retirement on July 1, 2008. Norm moved to Montreal after his retirement from the I.H. Asper School of Business and became Chair of the Tri-Council Panel on Research Ethics leading the Panel through a complete re-conceptualization of the Policy on Ethical Conduct for Research Involving Humans – a change which made the policy truly responsive to the needs of both the research community and participants.

Norm was a founding member of the Manitoba Centre for Health Policy and a Senior Researcher at the Centre until 2008. He was a Charter member of the Interagency Advisory Panel on Research Ethics charged with stewardship of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS). That document governs research ethics involving humans for all Canadian Universities and all recipients of Tri-Council support. Most recently he chaired the Panel and guided it in a major revision of the TCPS.

Dr. Norm Frohlich passed away peacefully, surrounded by his loving family on Thursday, June 27, 2013 in Montreal. He is survived by his wife Roberta and three children.

In Memoriam: ELIZABETH M. FENIAK

Dr. Elizabeth (“Betty”) Feniak, a senior academic in the Faculty of Human Ecology passed away on Sunday, April 7, 2013 at the age of 92.

Elizabeth was born near Shoal Lake, Manitoba in 1920 and graduated from the University of Manitoba with B.Sc (Home Ec.) in 1941. She continued her studies at the University of Minnesota receiving an M.Sc in 1943 and later a PhD in 1966. She was a faculty member in Human Ecology for 35 years beginning in 1950 until her retirement in 1985. During this time she taught courses and conducted research in nutrition that included a dietary study of rural Manitoban families and Hutterite communities, as well as developing nutrition programs for urban Indigenous groups. Elizabeth also served in an Administrative capacity as Associate Dean from 1970-78 and Acting Head of the Department of Family Social Sciences from 1977-78. She was an active member of many Faculty and University Committees including the Senate Library Committee, Committee on Women on Campus and the University Centennial Committee.

In addition to her many academic and administrative contributions to the then Faculty of Home Economics, Dr. Feniak provided important leadership to the Canadian Home Economics Association where she served as President and also chaired the Canadian Home Economics Foundation from 1985-2003. She was a member of the advisory committee on nutrition to the Minister of National Health and Welfare from 1963-69 and was President of the Dietetic Association of Manitoba from 1964-65. Together with her graduate student, Charlotte Moore, she piloted the “Meals on Wheels” program. She served as President of the Provincial Council of Women. In recognition of her community service, she received the Queen Elizabeth II Silver Jubilee Medal in 1977 and the Queen Elizabeth II Golden Jubilee Medal in 2002. She was named “Woman of Distinction” by the YWCA in 1982 and was made a life member of the National Council of Women, Manitoba Council of Women, and Manitoba Women’s Institute in 1985. For a lifetime of outstanding achievement, dedication to the community and service to the nation, Elizabeth also received the Order of Canada in 1988.

Dr. Feniak, sadly widowed a few years after her marriage, was the mother of two children, Peter and Barbara, and three grandchildren.

IN MEMORIAM

DR. DANA GAYLE STEWART

Dr. Dana Stewart, a former Human Ecology faculty member at the University of Manitoba, passed away on Tuesday, June 25 in Winnipeg at the age of 68. Dana was born and educated in Winnipeg where she received a Bachelor of Interior Design and a Masters in City Planning degrees from the University of Manitoba. She joined the Department of Family Studies (now the Department of Family Social Sciences) in the Faculty of Human Ecology in 1971 where she proved herself to be an excellent teacher and much sought after speaker for the next 21 years. Dana was promoted to Associate Professor in 1988. She received a Merit Award for Teaching in 1991. Dana had a wonderful sense of color and was always enthusiastic and supportive of her students.

In 1991 she received her Ph.D in urban and regional planning from the School of Community and Regional Planning at the University of British Columbia. In 1992 she moved to the Faculty of Architecture as Director of the newly established Housing Studies, Research and Development Program. She held this position with great distinction until offered a position as Chair of the Department of Human Environment and Design in the College of Human Ecology at Michigan State University (MSU). In addition to being chairperson, Dana was also Director of two research units in the Faculty of Architecture.

In 1999 she won the Distinguished Educator Award from the International Faculty Management Association for the development of an MSU Virtual University masters level certificate program in faculty management. In 2001-2002, Dana was selected as Fellow of the American Council of Education (ACE), which allowed her to focus on the topic of technology in the learning environment.

After retiring, Dana returned to Winnipeg where she volunteered her time using her skills as a teacher at an ESL school. She was a lifelong admirer of the arts, Opera, Ballet and anything that would add beauty, colour and elegance to her world. Dana leaves behind her daughters, granddaughters and her brother Brent Stewart.




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MEMORANDUM

DATE: June 26, 2013
TO: David Barnard, President
FROM: Jeff M. Leclerc, University Secretary 
SUBJECT: ***APPROVAL OF MOTION, BOARD OF GOVERNORS MEETING –
June 25, 2013***

At its meeting on June 25, 2013, the Board of Governors approved the following motions:

THAT the Board of Governors approve the Strategic Enrolment Management Planning Framework 2013 - 2014.

THAT the Board of Governors approve a proposal for a Community Recreation and Active Living Diploma [as recommended by Senate, June 19, 2013].

THAT the Board of Governors approve a proposal to change the name of the Department of Mechanical and Manufacturing Engineering to “Department of Mechanical Engineering,”[as recommended by Senate on June 19, 2013].

THAT the Board of Governors approve the establishment of an Endowed Professorship in Pharmacy Research [as recommended by Senate, June 19, 2013].

THAT the Board of Governors approve the establishment of an Endowed Professorship in Stem Cell Research [as recommended by Senate, June 19, 2013].

THAT the Board of Governors approve the establishment of an Endowed Professorship in Government [as recommended by Senate, June 19, 2013].

THAT the Board of Governors approve the Report of the Senate Committee on Awards – Part A [dated April 9, 2013].

THAT the Board of Governors approve the Report of the Senate Committee on Awards – Part B [dated April 9, 2013].

THAT the Board of Governors approve nine new offers, nine amended offers, and the withdrawal of two offers, as set out in Appendix A of the Report of the Senate Committee on Awards – Part A [dated May 14, 2013].

THAT the Board of Governors approve one new offer as set out in Appendix A of the Report of the Senate Committee on Awards – Part B [dated May 14, 2013].

THAT the Board of Governors approve three new offers and one amended offer, as set out in Appendix A of the Report of the Senate Committee on Awards [dated May 21, 2013].

Copy: Shannon Coyston, Academic Specialist

JML/sf

PRESIDENT'S REPORT: September 4, 2013

GENERAL

On June 21, the Truth and Reconciliation Commission of Canada and the University of Manitoba signed an agreement naming the University as the host of the National Research Centre on Residential Schools, which will be a permanent resource that allows all Canadians the opportunity to learn about what happened within Residential Schools, and to join together on a path toward reconciliation.

Access Copyright has sued York University. The litigation puts into issue the common approach to fair dealing and other copyright issues adopted by most post-secondary institutions across the country. The case is likely to develop into the leading precedent on user's rights. York will be supported in the litigation through AUCC and by individual schools. The University of Manitoba is still operating under the provisions of the model license it signed with Access copyright in May 2102, facilitating copying from Access Copyright's repertoire until December 31, 2015.

The Winnipeg Football Club opened its doors to the University community and neighbourhood on May 28^t and Investors Group Field has begun operating and hosting events. These include a 'One Heart Service' on Sunday, May 26th, the first Blue Bomber pre-season game on June 12th and the Taylor Swift concert on June 22. The University is working with stadium partners to advise on adjustments to logistics for future events. The Event Day Parking and Transportation Plan located at www.investorsgroupfield.ca.

On June 4, Chip Wilson, co-founder and chairman of Lululemon Athletica Inc., received the University of Manitoba's 2013 International Distinguished Entrepreneur Award (IDEA) from the Associates, a group of prominent business leaders who support the Asper School of Business. While in Winnipeg, in addition to the formal dinner at the Convention Centre, Mr. Wilson also gave a presentation to students and other members of the university community.

Spring Convocation took place at the end of May, at which the University conferred degrees on over 2,800 new graduates. The University also was privileged to give honorary degrees to several noteworthy individuals: Wayne Anderson, Elder Harry Bone, Henry Engbrecht, Julie Payette, Strinivasan Reddy, Archbishop V. James Weisgerber, and Phyllis Yaffe.

ACADEMIC MATTERS

- Nazim Cicek, biosystems engineering, was presented with a 2012 Manitoba Excellence in Sustainability Award for his research on water and nutrient management and biofuel generation. The Manitoba Round Table for Sustainable Development established the awards to recognize and honour people, projects and ideas that successfully turn the principles and guidelines of sustainable development into lasting achievements.
- Sue Arntfield, food science, was selected to receive the North American Colleges and Teachers of Agriculture (NACTA) Teaching Award of Merit recognizing those who excel in teaching an agricultural discipline.

- Kees Plaizier, animal science, has been elected as Editor-in-Chief of the Canadian Journal of Animal Science effective January 1, 2014.
- *Imagining Winnipeg: History through the Photographs of L.B. Foote*, by Esyllt W. Jones, received the Best Illustrated Book of the Year Award. This book was nominated for four Manitoba Book Awards: McNally Robinson Book of the Year; Best Illustrated Book; Carol Shields Winnipeg Book Award; and the Mary Scorer Award for Best Book by a Manitoba Publisher.
- Dennis Cooley, english, film, & theatre, received the Manitoba Book Award's *Lifetime Achievement Award*. Dennis's literary work is a great contribution to prairie literature. As a founding member of Turnstone Press and a president of the Manitoba Writer's Guild, he helped many aspiring new writers to establish themselves in the Canadian literary world.
- Atlanta Sloane-Seale, extended education, was named the Chief Editor of the Canadian Journal of University Continuing Education.
- Mike Namaka, pharmacy, was invited to serve as the Editor for the Journal of Pharmaceuticals and Drug Development.
- Peter Kulchyski, native studies, will launch his book *Aboriginal Rights are Not Human Rights: In Defense of Indigenous Struggles* at McNally Robinson Booksellers. Peter argues that Aboriginal rights do not belong to the broader category of universal human rights because they are grounded in the particular practices of Aboriginal people. His book provides conceptual and historical analysis of aboriginal and treaty rights in Canada, and offers concrete suggestions to transform the current policy paradigm into one that supports and invigorates indigenous cultures in a contemporary context.
- Kristian Enright, arts graduate student, received the John Hirsch Award for Most Promising Manitoba Writer.
- Milena Djulancic and Laura Poppel, law students, represented Canada at the G20 Youth Summit in St. Petersburg, Russia. Approximately 1,500 young leaders, students, academics, business and government representatives from across the globe took part. Melina Djulancic was appointed to act as Canadian Head of State. In this role she participated in discussions that addressed global issues on the actual G20 agenda and provided recommendations that would be shared with the official Heads of State, as well as international organizations like the World Bank and the International Monetary Fund.
- Danielle Chu, undergraduate science student and Coordinator of the University of Manitoba's Let's Talk Science chapter, was the runner-up for the 2013 national Let's Talk Science Site Coordinator of the Year Award. The award recognizes outstanding site coordinators in Canada who are passionate about science and science outreach and are committed to strengthening and developing their site locally, while thinking nationally. There are currently over 60 coordinators at 39 outreach sites across Canada. Over the past four years, three coordinators at the University of Manitoba have received national recognition.

- Asper School of Business will introduce the Asper MBA Executive Mentor Program this summer. The Asper MBA Executive Mentor Program connects Asper MBA students with inspirational leaders in Winnipeg and across Canada. The program will enable MBA students to enhance their leadership skills, build relationships, increase their business knowledge and expand their career options.
- Michael Domaratzki, computer science, along with computer science faculty and students, hosted the fifth annual Manitoba High School Computer Science Day on Friday, May 24, 2013. The event hosted 120 participants to a full day of activities including: tours of research lab and facilities, an introduction to the department's Co-op student employment program, a programming contest and a computer science fair.
- Manitoba Schools Science Symposium, an annual provincial science fair took place at the University of Manitoba on April 26, 2013. Twenty Let's Talk Science (LTS) volunteers provided hands-on science activities throughout the day and reached out to 102 high school students.
- The fourth annual All Science Challenge was held on May 3, 2013. This is an exciting and fun-filled national science enrichment event involving a question and answer competition and hands-on Design Challenge for teams of grade 6, 7 and 8 students. This year, 26 teams representing 96 students from 12 schools in Winnipeg and rural Manitoba competed for the grand title of the All Science Challenge champion. The hands-on challenge involved designing and building a Shuttle Remote Manipulator System, also known as the "Canadarm". The event was organized by a committee of LTS volunteers and Faculty of Science alumni.
- The University of Manitoba once again hosted the Science Rendezvous on May 11, 2013. The public was invited to explore dozens of interactive displays, hands-on activities, a chemistry magic show, a physics circus, and cutting-edge research conducted at the University of Manitoba. The event was staffed by LTD volunteers and hosted more than 200 children. In April and May, 118 LTS volunteers reached out to a total of 1412 students! In addition, three rural outreach trips are planned for Rosenort, Morris and St. Eustache.
- On May 23, 2013, the "Not Myself Today @ Work" campaign was launched. This campaign is designed to educate and engage Canadians on the issues of mental health in the workplace, and culminated in a national "Not Myself Today @ Work" Day on June 6th. Over 1100 mood badges, 500 stickers, and other promotional items were distributed to faculty and staff at the Campus Beautification Day barbeque. Workplace wellness tips are being shared on a daily basis on U of M social media sites for ideas about improving mental health at work.

RESEARCH MATTERS

- Dr. Malcolm Doupe (Community Health Sciences/Manitoba Centre for Health Policy) was the recipient of the CIHR Institute of Health Services and Policy Research (IHSPR) 2012-13 Article of the Year award. The Article of the Year Award recognizes published research that has significantly contributed to the advancement of the field of health services and policy research in Canada. Doupe's research focuses on using innovative data linkages to measure the quality of nursing home care in the province, project future demands, develop new admission criteria and discuss alternates to institutional care.

- Dr. Greg McCullough, Research Associate Centre for Earth Observation Science, was the recipient of the 2012 Alexander Bajkov (1894-1955) award, established by the Lake Winnipeg Foundation. Bajkov was one of the first people to study Lake Winnipeg and the award is given in his memory. McCullough was honoured for his dedication to the understanding of Lake Winnipeg and his efforts to protect, preserve and restore the lake and its watershed through his research studies.
- Dr. Michelle Driedger (Community Health Sciences), Canada Research Chair in Environment and Health Risk Communication, has been accepted into the inaugural Science Leadership Program (SLP) at the University of Toronto. The SLP aims to provide outstanding academic scientists with the skills, approaches and frameworks for engaging more effectively with the media, the decision makers and the public throughout their careers. Designed by Professor Ray Jayawardhana, Senior Advisor on Science Engagement to the President of the University of Toronto, with the guidance of a planning advisory group, the SLP will build a network of top researchers across the U of T and other research-intensive universities in Canada, who share a common set of goals and to connect them with leaders of relevant external organizations and media to help foster a culture change.
- The Health, Leisure and Human Performance Research Institute held their inaugural Research Day in May. The day was an opportunity to showcase the cutting-edge research underway by Institute research affiliates and partner organizations in Manitoba. The day was made up of a number of concurrent sessions, a keynote by Dr. Phillip Gardiner (Institute Director), a student research poster competition and numerous networking and collaboration opportunities.
- The Centre on Aging held its 30th Annual Spring Research Symposium at the Bannatyne Campus in early May. Minister of Healthy Living, Jim Rondeau brought opening remarks and premiered a video highlighting the Province's age-friendly communities initiatives. The day was a resounding success with several hundred participants taking in the wide array of concurrent sessions presented by research associates of the Centre with their collaborating research partners.
- Thirty-one investigators received a total of \$1,305,701 in funding from various sponsors. The projects over \$25,000 in total are as follows:

Researcher	Sponsor	Project Title	Funding
Barber, David (Centre for Earth Observation Science)	ArcticNet	Freshwater-Marine Coupling in the Hudson Bay IRIS	\$99,095
Barber, David (Centre for Earth Observation Science)	ArcticNet	The Role of Sea-Ice in ArcticNet IRISes	\$112,410
Barber, David (Centre for Earth Observation Science)	ArcticNet	Hudson Bay IRIS Coordination	\$70,000
Barber, David (Centre for Earth Observation Science)	Province of Manitoba (Manitoba Centres of Excellence)	ArcticNet (Seven Projects)	\$94,984

Becker Allan (Pediatrics and Child Health)	Province of Manitoba (Manitoba Centres of Excellence)	The Canadian Healthy Infant Longitudinal Development (CHILD) Study	\$31,950
Becker, Allan (Pediatrics and Child Health)	Allergy, Genes and Environment Network (AllerGen)	The Canadian Healthy Infant Longitudinal Development (CHILD) Study	\$180,000
Ferguson, Steven (Centre for Earth Observation Science)	ArcticNet	Impacts of Global Warming on Marine Mammals	\$60,650
Li, Geny (Plant Science)	Western Grains Research Foundation	Achieving the best resistance to clubroot disease in canola by pyramiding multiple effective resistance genes	\$34,500
Linden, Rick (Sociology)	Auto21	Antisocial Behaviour and the Automobile: Focusing Resources to Prevent Automobile-Linked Crime in Canada	\$45,000
Papakyriakou, Tim (Environment and Geography)	ArcticNet	Carbon Exchange Dynamics in Coastal and Marine Ecosystems	\$70,610
Porter, Michelle (Kinesiology and Recreation Management)	Auto21	A Comprehensive Training Approach to Enhance Safe Driving in Older Adults	\$31,756
Rysgaard, Søren (Centre for Earth Observation Science)	ArcticNet	Arctic Geomicrobiology and Climate Change	\$35,000
Sepehri, Nariman (Mechanical and Manufacturing Engineering)	Mitacs Inc.	System Identification and Control of Fixed-Wing Unmanned Aerial Vehicles	\$45,000
Stern, Gary (Centre for Earth Observation Science)	ArcticNet	Effects of Climate Change on Carbon and Contaminant Cycling in the Arctic Coastal and Marine Ecosystems	\$95,355
Stern, Gary (Centre for Earth Observation Science)	ArcticNet	IRIS Scientific Coordination	\$70,000

Wang, Feiyue (Environment and Geography)	ArcticNet	Effects of Climate Change on Carbon and Contaminant Cycling in the Arctic Coastal and Marine Ecosystems	\$42,000
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- Eleven health researchers received a total of \$1,645,308 in funding from various sponsors. Those projects over \$25,000 are as follows:

Researcher	Sponsor	Project Title	Funding
Dolinsky, Vernon (Pharmacology and Therapeutics)	Children's Hospital Foundation of Manitoba Inc.	Diabetes during pregnancy and metabolic programming in the offspring: Investigating metabolic pathways for intervention	\$40,000
Farenhorst, Annemieke (Soil Science)	University of Manitoba	NSERC CREATE program for water and sanitation security in First Nations (H2O CREATE)	\$450,000
Fowke, Keith (Medical Microbiology)	Canadian HIV Vaccine Initiative (CHVI) Alliance Coordinating Office	International infectious diseases and global health training program: Four continents, one shared experience	\$40,000
Jackson, Michael F. (Pharmacology and Therapeutics)	University of Western Ontario	Cascades of Non-selective cation channels that mediate cell signaling or cell death in the hippocampus	\$120,000
Larcombe, Linda (Internal Medicine)	CIHR	A new vision: Dene First Nations perspectives on healthy housing	\$195,910
Lix, Lisa (Community Health Sciences)	CIHR	The analysis of patient-reported outcome measures: Statistical methods for response shift (PROM-RS)	\$64,398
Strong, James (Medical Microbiology)	McLaughlin Foundation	The impact of supportive care and targeted therapies on survival from ebolavirus sepsis	\$25,000
Strong, James (Medical Microbiology)	Manitoba Medical Service Foundation	The impact of supportive care and targeted therapies on survival from ebolavirus sepsis	\$25,000
Vosoughi, Reza (Internal Medicine)	Manitoba Health Research Council	Phase I/II interventional clinical trial for CCSVI in MS patients	\$500,000

- Fifty-nine research projects received \$8,314,175 in funding from the Natural Sciences and Engineering Research Council of Canada (NSERC). Project totaling over \$25,000 are listed below:

Researcher	Sponsor	Project Title	Funding
Acar, Elif (Statistics)	RGPIN	Flexible Dependence Models for Multivariate Data	\$100,000
Alfa, Attahiru (Electrical & Computer Engineering)	RGPIN	Developing Efficient and Effective Algorithms for Complete Analysis of a Class of Vacation Queueing Models	\$230,000
Ali, Geneviève (Geological Sciences)	RGPIN	Water, sediment and nutrient connectivity in engineered Prairie landscapes	\$140,000
Aluko, Rotimi (Human Nutritional Sciences)	RGPIN	Structure-function properties of food protein-derived calmodulin-binding peptides: in vivo studies	\$285,000
Bridges, Greg (Electrical & Computer Engineering)	NSERC Engage Grant	Modelling of the electromagnetic signature of multi-layer coins	\$25,000
Bruce, Neil (Computer Science)	RGPIN	Computational Modeling and Analysis of Human Gaze Behavior	\$100,000
Brule-Babel, Anita (Plant Science)	RGPIN	Investigation of host resistance to <i>Fusarium graminearum</i> in common wheat (<i>Triticum aestivum</i> L.)	\$29,000
Buchanan, Douglas (Electrical & Computer Engineering)	RGPIN	Materials and devices for advanced transistors and olfactory sensors	\$145,000
Cai, Jun (Electrical & Computer Engineering)	RGPIN	Radio Resource Management in Cognitive Radio Networks	\$175,000
Chakhmouradian, Anton (Geological Sciences)	RGPIN	Implications of the structural setting, magma-wallrock interaction and postemplacement evolution of postorogenic carbonatites for their rare-metal (REE, Nb, Zr, U) potential	\$165,000
Chaturvedi, Mahesh (Mechanical & Manufacturing Engineering)	RGPIN	Welding of Single and Polycrystal Nickel Superalloys to Aluminides Based Aero-engine and Power Generation Turbine Materials by New and Emerging Joining Technologies	\$125,000

Deng, Chuang (Mechanical & Manufacturing Engineering)	RGPIN	Size-Dependent Strength and Plasticity in Metallic Nanocrystalline-Amorphous Composites	\$125,000
Docker, Margaret (Biological Sciences)	RGPIN	Developmental and Genetic Basis of Life History Variation along a Speciation Continuum	\$110,000
Ehn, Jens (Environment & Geography)	RGPIN	Role of radiative forcing on the sea ice melt-growth cycle in a changing Arctic marine environment	\$140,000
ElMekkawy, Tarek (Mechanical & Manufacturing Engineering)	RGPIN	Robust scheduling of stochastic and dynamic systems	\$120,500
Gericke, Michael MTW (Physics & Astronomy)	SAPPJ	Fundamental physics with cold neutrons at the Spallation Neutron Source	\$74,000
Ghia, Jean-Eric (Immunology)	RGPIN	Role of Chromogranin A and its derived peptides in the context of gut physiology	\$150,000
Gibson, Spencer (Biochemistry & Medical Genetics)	RGPIN	The role of the BH3-only protein BNIP3 in regulation of cell survival in the brain	\$36,000
Gordon, Joseph (Nursing)	RGPIN	Wnt and Notch Regulation of Cardiac and Vascular Smooth Muscle Gene Expression During Differentiation.	\$160,000
Irani, Pourang (Computer Science)	RGPIN	Transforming Ultra-Portable Devices into Information-Rich Appliances	\$150,000
Jakobson, Lorna (Psychology)	RGPIN	Social perception and social cognition in typical and atypical development	\$165,000
Jamieson, Randall (Psychology)	RGPIN	A computational account of learning and memory	\$125,000
Jayas, Digvir (Biosystems Engineering)	RGPJP	Mathematical modeling of stored-grain ecosystems: a tool for preserving grain quality	\$140,000
Kormish, Jay (Biological Sciences)	RGPIN	The morphogenic movements and cell signalling events during organ development	\$175,000

Li, Genyi (Plant Science)	RGPIN	Analysis of the relationship between seed coat color genes and oil concentration in Brassica species through gene cloning	\$145,000
Major, Arkady (Electrical & Computer Engineering)	RGPIN	Advanced laser physics and nonlinear optics: pushing the limits of ultrashort pulse laser sources and nonlinear imaging techniques	\$160,000
Mammei, Juliette JM (Physics & Astronomy)	SAPPJ	PREX II and CREX: Precision Parity Violating Measurement of the Neutron Skin of Heavy Nuclei at Jefferson Laboratory	\$270,000
Mandal, Saumendranath (Statistics)	RGPIN	Optimization problems in optimal regression design, response-adaptive design and categorical random variables	\$55,000
Mann, Daniel (Biosystems Engineering)	RGPIN	Ergonomic evaluation for mobile agricultural machinery	\$130,000
Michel, Christine (Environment & Geography)	RGPIN	Influence of hydrography and microbial processes on the cycling of sea ice-associated material in the Arctic	\$108,000
Mookherjee, Neeloffer (Internal Medicine)	RGPIN	Cytokines and host defence peptides: Delineating molecular mechanisms regulating inflammation	\$250,000
Mufti, Aftab (Civil Engineering)	RGPIN	Bridge Weigh-in-Motion	\$105,000
Mufti, Aftab (Civil Engineering)	NSERC Engage Grant	Crack monitoring sensor for bridge girders	\$25,000
Mundy, Christopher (Environment & Geography)	RGPIN	Physical and biological controls of primary production in the ice-covered Canadian Arctic marine system	\$135,000
Oresnik, Ivan (Microbiology)	RGPIN	Genetic, Biochemical, and Physiological Characterization of the Plant Symbionts <i>Sinorhizobium meliloti</i> and <i>Rhizobium leguminosarum</i>	\$250,000

Page, Shelley SA (Physics & Astronomy)	SAPPJ	Qweak: Weak Charge of the Proton and New Physics at Jefferson Laboratory (JLab E02-020, E05-008)	\$420,000
Pelka, Peter (Microbiology)	RGPIN	Role of cellular factors FUBP1 and DREF in regulation of viral and cellular gene expression via adenovirus E1A.	\$160,000
Portet, Stephanie (Mathematics)	RGPIN	Modelling intermediate filament networks	\$150,000
Rajapakse, Athula (Electrical & Computer Engineering)	RGPIN	Protection, Control and Optimal Operation of Microgrids with Renewable Generation	\$175,000
Scanlon, Martin (Food Science)	RGPIN	Constitutive Properties of Soft Aerated Food Materials	\$145,000
Schweizer, Frank (Chemistry)	RGPIN	Synthetic, structural and biological studies on glycosylated amphiphilic polyproline II helices	\$170,000
Sepehri, Nariman (Mechanical & Manufacturing Engineering)	RGPIN	High Performance, Reliable and Efficient Fluid Power: Challenges in Controls, Diagnosis and Layouts	\$225,000
Sharanowski, Barbara (Entomology)	RGPIN	Phylogenetics of Ichneumonidea (Hymenoptera): understanding host-choice evolution using innovative molecular approaches	\$155,000
Soliman, Hassan (Mechanical & Manufacturing Engineering)	RGPIN	Fluid Mechanics and Heat Transfer in Multiphase Energy Systems	\$160,000
Southern, Byron (Physics & Astronomy)	RGPIN	Magnetism at the Nanoscale	\$90,000
Stasolla, Claudio (Plant Science)	RGPIN	Regulation of in vitro embryogenesis	\$200,000
Tenuta, Mario (Soil Science)	RGPIN	Development of Greenhouse Neutral Cropping Systems: Soil N ₂ O Emissions from N Fertilizer Management and Organic Production Systems	\$165,000
van Lierop, Johan (Physics & Astronomy)	RGPIN	Controlling cooperative phenomena in nanomagnetic systems - New physics and its application	\$160,000

Wang, Bing-Chen (Mechanical & Manufacturing Engineering)	RGPIN	Large-Eddy Simulation of Turbulent Scalar Transport Processes in Smooth and Rough Wall Boundary Layers	\$160,000
Wang, Xikui (Statistics)	RGPIN	Optimal statistical exploration and exploitation: theory, methods and applications	\$55,000
Wang, Yang (Computer Science)	RGPIN	Understanding Humans in Images and Videos	\$100,000
Weihrauch, Dirk (Biological Sciences)	RGPIN	Nitrogen excretion and acid-base regulation in invertebrate systems: Mechanisms, regulation and the specific role of Rh-proteins and AMTs.	\$165,000
Werbowski-Ogilvie, Tamra (Biochemistry & Medical Genetics)	RGPIN	Investigating the role of Lin28A in human embryonic neural lineage function	\$160,000
Wyss, Urs (Mechanical & Manufacturing Engineering)	RGPIN	Improving the long-term performance of modular connections in artificial joints	\$115,000
Yao, Xiaojian (Medical Microbiology & Infectious Diseases)	RGPIN	Roles and molecular mechanisms of SUMO-interaction motifs and SUMOylation of retroviral integrase in mediating its cofactor binding and beyond	\$36,000
Yurkov, Vladimir (Microbiology)	RGPIN	Microbial Aerobic Anoxygenic Photosynthesis and Heavy Metal Transformations	\$250,000

ADMINISTRATIVE MATTERS

- **AESES Security bargaining** – a collective agreement was reached and ratified by the membership.
- **UMFA bargaining** – collective bargaining is set to commence on June 21.
- Employees notified on June 5th that the University is taking a new approach to **Caretaking**. Responsibility for Custodial Management will be assumed by Physical Plant as of September 1st.
- In recognition of the Energy Efficient Lighting installed in the Frank Kennedy squash court space, the University of Manitoba recently received a **Power Smart Commercial Lighting Program** incentive cheque of \$4,650.00. The University's participation in a Power Smart for Business program earns the business recognition as an Efficiency Partner.

- First annual **North American Occupational Safety and Health (NAOSH)** week has come to a close with a very positive and successful outcome for the 280 employees who received safety courses on: Fire Extinguisher Training, First Aid Awareness and Education, Due Diligence, Hazard Assessment and Workplace Hazardous Materials Information System (WHMIS). A fire alarm drill was held on May 16, 2013 with very encouraging results; a complete evaluation of Physical Plant occurred in less than 2 minutes.
- The six **Visionary (re)Generation International Urban Design** finalists met in Winnipeg on June 3rd & 4th. The meeting was an opportunity for the finalists to visit the University and Southwood Lands and meet with the technical team to pose questions to assist them in preparation for their Phase 2 submissions.

Balance of Competition Schedule – Competition Phase 2 scheduled from May to September 2013 with the winner to be announced in November 2013.

- **Wayfinding Strategy** – *form*: media, wayfinding consultants, submitted their first draft report to the Wayfinding Working Group. Three wayfinding options were presented to the working group. This process will be completed in late August/early September.
- The **Bannatyne Campus Master Plan** process will wrap up this month, culminating a two month engagement process engaging with over 800 people and 40 stakeholder groups including students, faculty, staff, administration and surrounding neighbourhoods. The drafting of the “What We Heard” report is currently underway.
- Office of Continuous Improvement (OCI) implementation of **PRINCE2™** project management methodology has begun.
- IST working with Physical Plant on the design of a **Life Safety Network** to facilitate central fire alarm monitoring.
- The **Manitoba Marathon** celebrated 35 years on Sunday, June 16th. With the marathon taking place on the Fort Garry campus, access to the Fort Garry campus was restricted between the hours of 5 am and 9 am on June 16th.

EXTERNAL MATTERS

- Canadian Council for the Advancement of Education (CCAEE) announced their 2013 Circle of Excellence awards recognizing outstanding work in advancement services, alumni relations, communications, fundraising and marketing as judged by peer professionals at schools, colleges and universities as well as by professionals from outside education.

The awards acknowledge superior accomplishments that have lasting impact, demonstrate the highest level of professionalism and deliver exceptional results. The University of Manitoba won Gold for the Trailblazer local recruitment campaign.

- As of June 5, 2013 the university has raised \$3,042,312.73 in this fiscal year.

- Significant gifts and activities include: the Associates of the I.H. Asper School of Business have pledged \$1 million to support business education initiatives at the Asper School.
- On May 3 Premier Greg Selinger and Minister of Health Theresa Oswald were at the Bannatyne campus to announce the Budget 2013 funding commitment for physicians. This year's budget includes over \$4.5 million to expand doctor training and recruitment initiatives, over \$300,000 for additional grants that can cover the full cost of medical school for up to 23 more students who agree to practice in under-served communities after graduation and increased support for internationally educated doctors working toward being fully licensed to practice in Manitoba.
- **Campus Beautification Day** was held on Thursday, May 23rd with approximately 1200 participants at the Fort Garry campus and 200 at the Bannatyne campus. Minister of Advanced Education and Literacy Erin Selby, Minister of Housing and Community Development and MLA for Fort Richmond Kerri Irvin-Ross and MP for Winnipeg South Rod Bruinooge participated in Campus Beautification Day as well as Grade 1 students from Ecole St. Avila.
- The University hosted the last Visionary Conversations event of the season on Wednesday, May 22nd titled 'Our Education System: The Good, the Bad and the Solutions'. The panelists for the event included: Joycelyn Fournier-Gawryluk (Alumna), Past President of the Canadian Association of Principals; Marni Brownell, Associate Professor, Community Health Sciences/Manitoba Centre for Health Policy, Faculty of Medicine; Marlene Atleo, Associate Professor, Educational Administration, Foundations and Psychology, Faculty of Education; and Rodney Clifton, Professor Emeritus, St. John's College, Senior Fellow, Frontier Institute.
- The Alumni Association Inc. Annual General Meeting will be held June 17 at University Centre, Marshall McLuhan Hall. The meeting begins at 7:00 p.m., followed by a reception at 8:00 p.m. Michelle Richard, Director of Campus Planning, will be speaking at the AGM on Campus Master Planning at Fort Garry and Bannatyne Campuses.
- The Homecoming 2013 brochure and registration information will be sent out in June. Online registration for all Homecoming events will be available for the first time this year.

Report of the Senate Executive Committee

Preamble

The Executive Committee of Senate held its regular monthly meeting on the above date.

Observations

1. Speaker for the Executive Committee of Senate

Professor John Anderson will be the Speaker for the Executive Committee for the September meeting of Senate.

2. Vacancies on the Senate Committee on Nominations

The report of the University Secretary on the Senate Committee on Nominations is attached (Appendix A). Members of the Senate Committee of Nominations are nominated by the Senate Executive Committee and elected by Senate (See recommendation below).

3. Request re: Co-Chair, Cooper Commission Implementation Working Group

Senate Executive approved a request from Mr. Leclerc, Co-Chair of the Cooper Commission Implementation Working Group, to appoint Ms. Brandy Usick (Director, Student Advocacy), as a Co-Chair of the Implementation Working Group, effective September 1, 2013. Ms. Usick will take over the role of Co-Chair from Dr. Lynn Smith (Executive Director, Student Services / Student Affairs), who is retiring from the University.

4. Comments of the Executive Committee of Senate

Other comments of the Executive Committee accompany the report on which they are made.

Respectfully submitted,

Dr. David Barnard, Chair
Senate Executive Committee
Terms of Reference:

http://umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/477.htm

Recommendation

The Senate Executive Committee recommends that the following nominations to the Senate Committee on Nominations be approved by Senate for one-year terms ending May 31, 2015:

- a) Mr. Hooman Derakhshani (graduate student)
- b) Mr. Astitwa Thapa (undergraduate student).

Vacancies on the Senate Committee on Nominations

At the July 1977 meeting of Senate, Senate approved without debate the following area representations for the Senate Committee on Nominations. The representation was amended in July 1991 to include the Libraries, and again in June 2005 to include the Clayton H. Riddell Faculty of Environment, Earth and Resources.

The current membership is as follows:

Agriculture & Human Ecology	Prof. Carla Taylor*	2015
Architecture & Engineering	Dean Jay Doering*	2016
Arts	Prof. Pam Perkins	2014
Education & Kinesiology and Recreation Management	Prof. Sandra Kouritzin*	2015
Law, Pharmacy & Environment, Earth and Resources	Dean Neal Davies*	2016
Management & Extended Education	Prof. Malcolm Smith	2014
Medicine & Dentistry	Prof. Bob McIlwraith*	2014
Music, Fine Art & Libraries	Prof. Karen Jensen	2015
Nursing, Social Work & Student Affairs	Prof. Marie Edwards*	2016
Science	Prof. Helen Cameron	2015
Students (2)	Ms Jennifer Black	2013
	Ms Jessica Rebizant	2013

* denotes member of Senate at time of appointment

The terms of Jennifer Black and Jessica Rebizant as student members ended on May 31, 2013. Consequently, student replacements are required for the term June 1, 2013 to May 31, 2014.

The University of Manitoba Graduate Students' Association has identified Mr. Hooman Derakhshani as willing to serve in this capacity, and the University of Manitoba Students' Union has identified Mr. Astitwa Thapa as willing to serve.

REPORT OF THE SENATE COMMITTEE ON AWARDS – PART B

Terms of reference for the Senate Committee on Awards include the following responsibility:

On behalf of Senate, to approve and inform Senate of all new offers and amended offers of awards that meet the published guidelines presented to Senate on November 3, 1999, and as thereafter amended by Senate. Where, in the opinion of the Committee, acceptance is recommended for new offers and amended offers which do not meet the published guidelines or which otherwise appear to be discriminatory under the policy on the *Non-Acceptance of Discriminatory Awards*, such offers shall be submitted to Senate for approval. (Senate, October 7, 2009)

Observation

At its meeting of June 20, 2013, the Senate Committee on Awards reviewed one new offer that appears to be discriminatory according to the policy on the *Non-Acceptance of Discriminatory Awards*, as set out in Appendix A of the *Report of the Senate Committee on Awards - Part B* (dated June 20, 2013).

Recommendation

The Senate Committee on Awards recommends that Senate and the Board of Governors approve one new offer, as set out in Appendix A of the *Report of the Senate Committee on Awards- Part B* (dated June 20, 2013). This award decision complies with the published guidelines of November 3, 1999, and is reported to Senate for information.

Respectfully submitted,

Dr. Phil Hultin
Chair, Senate Committee on Awards

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses the report to Senate.

MEETING OF THE SENATE COMMITTEE ON AWARDS

Appendix A June 20, 2013

1. NEW OFFERS

James A. Aitken Graduate Scholarships in Mechanical Engineering

James A. Aitken will provide an annual contribution to a trust fund established in 2012 to offer the James A. Aitken Graduate Scholarships in Mechanical Engineering at the University of Manitoba. The purpose of the scholarships is to provide support to graduate students in the Department of Mechanical Engineering. The scholarships will be offered for a four-year term beginning in 2013-2014 and ending in the 2016-2017 academic year. Each year, the available annual interest and the capital of the fund will be used to offer two scholarships, valued at \$3,000 each, to graduate students who:

- (1) are enrolled full-time in the Faculty of Graduate Studies in a Master's or Doctoral program in the Faculty of Engineering in the Mechanical Engineering program at the University of Manitoba;
- (2) have achieved a minimum degree grade point average of 3.5.

Preference for one of the graduate scholarships will be given to a female student every year.

In the event that there are still monies available in the trust fund (including the capital, unspent revenue, and revenue funds) after the expiration of the four-year term, they will be used to offer scholarships of equal value, with a minimum value of \$3,000 each, in the 2017-2018 academic year. The number of scholarships awarded will be at the discretion of the selection committee.

The Dean of the Faculty of Graduate Studies (or designate) will ask the Chair of the Engineering Graduate Awards Committee of the Faculty of Engineering to convene the selection committee for this award.

The Board of Governors of the University of Manitoba has the right to modify the terms of this award if, because of changed conditions, it becomes necessary to do so. Such modification shall conform as closely as possible to the expressed intention of the donor in establishing the award.

(Attachment I)

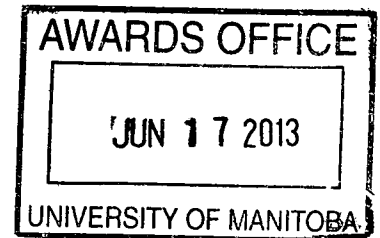


UNIVERSITY
OF MANITOBA

Faculty of Engineering
Office of the Dean



E2-290 Engineering Building
Winnipeg, Manitoba
Canada R3T 5V6
Telephone (204) 474-9809
Fax (204) 275-3773



Dr. Phil Hultin
Chair of the Senate Committee on Awards

Dear Dr. Phil Hultin:

RE: James A. Aitken Graduate Scholarships in Mechanical Engineering

The Faculty of Engineering is committed to the growth of the number of women enrolled in engineering education. The James A Aitken Graduate Scholarships in Mechanical Engineering will assist in attracting top calibre students to the Mechanical Engineering program and in particular by directing one scholarship to a female student it will help to increase the female participation in Mechanical Engineering.

Data from the Office of Institutional Analysis indicate that during the last five winter terms the percentage of female Master's and Ph.D. students in Mechanical Engineering is as follows:

Winter term 2013	13.3%
Winter term 2012	16.4%
Winter term 2011	13.7%
Winter term 2010	15.8%
Winter term 2009	15.6%

The average over these last five years is 15.0% which compares to the Canadian National average of 14.4% female students in Masters and PhD programs in Mechanical Engineering (National Data from the Engineers Canada Enrolment Report for 2007-2011).

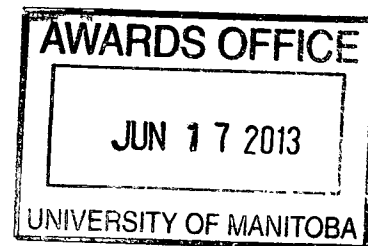
The Faculty of Engineering continues to work to remove any perceived or existing barriers that prevent females from entering Faculty of Engineering programs.

I strongly support the establishment of the James A. Aitken Graduate Scholarships in Mechanical Engineering.

Sincerely,

J. Beddoes

Jonathan Beddoes, Ph.D., P.Eng.
Professor and Dean



REPORT OF THE SENATE COMMITTEE ON AWARDS – PART B

Terms of reference for the Senate Committee on Awards include the following responsibility:

On behalf of Senate, to approve and inform Senate of all new offers and amended offers of awards that meet the published guidelines presented to Senate on November 3, 1999, and as thereafter amended by Senate. Where, in the opinion of the Committee, acceptance is recommended for new offers and amended offers which do not meet the published guidelines or which otherwise appear to be discriminatory under the policy on the *Non-Acceptance of Discriminatory Awards*, such offers shall be submitted to Senate for approval. (Senate, October 7, 2009)

Observation

In an electronic poll conducted on between July 31 – August 7, 2013, the Senate Committee on Awards reviewed four new offers and two amended offers that appear to be discriminatory according to the policy on the *Non-Acceptance of Discriminatory Awards*, as set out in Appendix A of the *Report of the Senate Committee on Awards – Part B* (dated August 7, 2013).

Recommendation

The Senate Committee on Awards recommends that Senate and the Board of Governors approve four new offers and two amended offers, as set out in Appendix A of the *Report of the Senate Committee on Awards – Part B* (dated August 7, 2013). This award decision complies with the published guidelines of November 3, 1999, and is reported to Senate for information.

Respectfully submitted,

Dr. Phil Hultin
Chair, Senate Committee on Awards

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses the report to Senate.

MEETING OF THE SENATE COMMITTEE ON AWARDS

Appendix A August 7, 2013

1. NEW OFFERS

ABEP Foundation 24 Entrance Scholarships

Each year, Aboriginal Business Education Partners (ABEP) offers ABEP Foundation 24 Entrance Scholarships. The purpose of this scholarship is to acknowledge the achievement of members joining ABEP after having completed the required courses to enter the I. H. Asper School of Business through any category including Direct Entry, Track 1 or Track 2. ABEP is part of the I.H. Asper School of Business strategy to support a growing community requirement for the acquisition of business skills among Aboriginal people. Such skills help lead to the success of self-government and participation of Aboriginal people in the Canadian economy. In order to encourage and recognize the student members of ABEP, numerous corporate and private sponsors contribute to support annual awards for these deserving students.

Each year, up to four scholarships will be offered to undergraduate students who:

- (1) have completed the required courses to enter the I.H. Asper School of Business;
- (2) are enrolled full-time (minimum 24 credit hours) in the Bachelor of Commerce (Honours) degree program at the I. H. Asper School of Business;
- (3) have a minimum degree grade point average of 2.0;
- (4) are members of ABEP in good standing;

The selection committee will have the discretion to determine the value of the scholarships each year.

The selection committee shall be named by the Director of ABEP (or designate) and may include the Director of Financial Aid and Awards (or designate).

(Attachments I and II)

ABEP This is My Path Prize

Each year, Aboriginal Business Education Partners (ABEP) offers the ABEP This is My Path Prize. The purpose of this prize is to recognize ABEP students' critical role in attracting new students to ABEP through sharing their stories in the media. ABEP is part of the I.H. Asper School of Business strategy to support a growing community requirement for the acquisition of business skills among Aboriginal people. Such skills help lead to the success of self-government and participation of Aboriginal people in the Canadian economy. In order to encourage and recognize the student members of ABEP, numerous corporate and private sponsors contribute to support annual awards for these deserving students.

Each year, up to four prizes, valued at \$250 each, will be offered to undergraduate students who:

- (1) have completed a minimum of 15 credit hours in the previous fall/winter session;
- (2) have achieved a minimum degree grade point average of 2.0 in the previous fall/winter session;
- (3) are members of ABEP in good standing.

Each candidate will have to submit a short essay (minimum 1,000 words) suitable for publication in various media. The essay needs to outline the student's personal story in choosing a degree in business at the I. H. Asper School of Business and ABEP's role in that journey.

Please note that the essay may be edited prior to publication. If a student is unsure of what to include in the essay, they should view last year's selected essays as a reference point or consult with ABEP staff.

The selection committee shall be named by the Director of ABEP (or designate) and may include the Director of Financial Aid and Awards (or designate).

(Attachments I and II)

Aboriginal Business Education Partners International Study Scholarship

Each year, Aboriginal Business Education Partners (ABEP) offers the ABEP International Study Scholarship. The purpose of this scholarship is to reduce the debt that each recipient incurs in his or her studies abroad. ABEP is part of the I.H. Asper School of Business strategy to support a growing community requirement for the acquisition of business skills among Aboriginal people. Such skills help lead to the success of self-government and participation of Aboriginal people in the Canadian economy. In order to encourage and recognize the student members of ABEP, numerous corporate and private sponsors contribute to support annual awards for these deserving students.

Each year, one or more scholarships, valued at a minimum of \$1,000 each, will be offered to undergraduate students who:

- (1) have been accepted to the I.H. Asper School of Business International Student Exchange Program;
- (2) are enrolled full-time (minimum 80% course load) in the I.H. Asper School of Business in the Bachelor of Commerce (Honours) degree program;
- (3) have a minimum degree grade point average of 3.0 at the time of application;
- (4) have completed a minimum of 24 credit hours in the Bachelor of Commerce degree program;
- (5) are members of ABEP in good standing.

Each student will be required to submit an application that includes a copy of the acceptance letter from the International Student Exchange Program and a proposed budget with sources of funds and expenses.

The selection committee will have the discretion to determine the number and value of scholarships awarded every year with no scholarship valued at less than \$1,000.

The selection committee shall be named by the Director of ABEP (or designate) and may include the Director of Financial Aid and Awards (or designate).

(Attachments I and II)

Aboriginal Business Education Partners Mentorship Prize

Each year, Aboriginal Business Education Partners (ABEP) offers the Aboriginal Business Education Partners Mentorship Prize. The purpose of this prize is to support the important mentorship role provided by ABEP students to their peers. ABEP is part of the I.H. Asper School of Business strategy to support a growing community requirement for the acquisition of business skills among Aboriginal people. Such skills help lead to the success of self-government and participation of Aboriginal people in the Canadian economy. In order to encourage and recognize the student members of ABEP, numerous corporate and private sponsors contribute to support annual awards for these deserving students.

Each year, one or more prizes, valued at \$250 each, will be offered to undergraduate students who:

- (1) are currently enrolled full-time (minimum 80% course load) in the I.H. Asper School of Business in the Bachelor of Commerce (Honours) degree program;
- (2) have achieved a minimum degree grade point average of 2.0 in the previous fall/winter session;
- (3) are members of ABEP in good standing.

Application Process:

When a new student (mentee) applies to ABEP based on the referral of a mentor, as confirmed by the Director of ABEP, the mentor will receive a mentorship prize for up to four consecutive years if the following conditions are met:

- (1) successful completion of 18 credit hours each year with a sessional grade point average of 2.0 or more for that year by both the mentee and the mentor towards earning their Bachelor of Commerce (Honours) degrees;
- (2) both the mentee and the mentor must be members in good standing of ABEP on April 1 of each year this prize is claimed;
- (3) the mentor and mentee work together satisfactorily in supporting the mentee through the completion of the degree program.

A mentor may hold up to three mentorship prizes at one time in any given year.

The mentorship prize is valued at \$250 per year, up to a maximum of 4 years (\$1,000) per mentoring relationship over 4 years. The Director of ABEP may place a maximum cap on the number of prizes awarded each year.

The selection committee shall be named by the Director of ABEP (or designate) and may include the Director of Financial Aid and Awards (or designate).

(Attachments I and II)

2. AMENDMENTS

ABEP Awards

The following amendments have been made to the terms of reference for the ABEP Awards:

- The former terms of reference approved by Senate with the name ‘ABEP Awards’ included terms of reference for both bursaries and scholarships. Each award type now has its own separate terms of reference. The terms of reference for the bursaries will now be known by its new name, *ABEP Bursaries*.
- The terms of reference for this award underwent significant revisions. This includes the deletion of all references to the scholarships.
- The preamble has been revised and now reads:

Each year, Aboriginal Business Education Partners (ABEP) offers ABEP Bursaries. The purpose of the bursaries is to provide support to student members of ABEP as they pursue their Bachelor of Commerce (Honours) degree at the I.H. Asper School of Business. The Manitoba Scholarship and Bursary Initiative has made contributions to this fund. ABEP is part of the I.H. Asper School of Business strategy to support a growing community requirement for the acquisition of business skills among Aboriginal people. Such skills help lead to the success of self-government and participation of Aboriginal people in the Canadian economy. In order to encourage and recognize the student members of ABEP, numerous corporate and private sponsors contribute to support annual awards for these deserving students. Each year, one or more bursaries will be offered to undergraduate students who:
- The revised eligibility criteria now read:
 - (1) are enrolled full-time (minimum 60% full course load) in the I.H. Asper School of Business in the Bachelor of Commerce (Honours) degree program;
 - (2) have achieved a minimum degree grade point average of 2.0;
 - (3) are members of ABEP in good standing;

- (4) have demonstrated financial need on the Aboriginal Business Education Partners bursary application form as approved by the Financial Aid and Awards office at the University of Manitoba.
- Two new sentences have been added immediately following the eligibility criteria. These two sentences are: “Students will be required to provide a copy of their notice of assessment at the time of application for the bursary” and “The selection committee will have the discretion to determine the number and value of bursaries awarded every year.”
- The description of the selection committee has been revised to read: “The selection committee shall be named by the Director of ABEP (or designate) and may include the Director of Financial Aid and Awards (or designate).”
- Several editorial changes have been made.

(Attachments I and II)

ABEP Awards

The following amendments have been made to the terms of reference for the ABEP Awards:

- The former terms of reference approved by Senate with the name ‘ABEP Awards’ included terms of reference for both bursaries and scholarships. Each award type now has its own separate terms of reference. The terms of reference for the scholarships will now be known by its new name, *ABEP Outstanding Performance Scholarships*.
- The terms of reference for this award underwent significant revisions. This includes the deletion of all references to the bursaries.
- The preamble has been revised and now reads:
Each year, Aboriginal Business Education Partners (ABEP) offers ABEP Outstanding Performance Scholarships. The purpose of these scholarships is to recognize outstanding academic achievement by student members of ABEP in the I.H. Asper School of Business. The Manitoba Scholarship and Bursary Initiative has made a contribution to this fund. ABEP is part of the I.H. Asper School of Business strategy to support a growing community requirement for the acquisition of business skills among Aboriginal people. Such skills help lead to the success of self-government and participation of Aboriginal people in the Canadian economy. In order to encourage and recognize the student members of ABEP, numerous corporate and private sponsors contribute to support annual awards for these deserving students.
- The revised eligibility criteria now read:
 - (1) are enrolled full-time (minimum 24 credit hours) in the I.H. Asper School of Business in the Bachelor of Commerce (Honours) degree program;
 - (2) have achieved a minimum degree grade point average of 3.0 based on the previous 12 months of study as indicated on the application form;
 - (3) are members of ABEP in good standing.
- The sentence immediately following the eligibility criteria now reads: “The selection committee will have the discretion to determine the number and value of bursaries awarded every year.”
- The description of the selection committee has been revised to read: “The selection committee shall be named by the Director of ABEP (or designate) and may include the Director of Financial Aid and Awards (or designate).”
- Several editorial changes have been made.

(Attachments I and II)



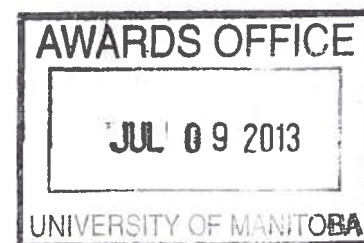
UNIVERSITY
OF MANITOBA

Asper School of Business

July 08, 2013

Dr. Philip Hultin
Chair, Senate Committee on Awards
c/o Candace Préjet
Awards Establishment Officer
417 University Centre

Michael Benarroch, PhD
Dean and CA Manitoba Chair in Business Leadership
314 Drake Centre
181 Freedman Crescent
Winnipeg, Manitoba
Canada R3T 5V4
Telephone 204-474-9712
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Email: Dean_AasperSchool@UManitoba.ca



RE: Aboriginal Business Education Partners Scholarships, Bursaries, and Awards

Dear Dr. Hultin:

The I.H. Asper School of Business strongly supports the establishment of the following:

- ABEP Awards (Bursaries)
- ABEP Awards (Scholarships)
- ABEP Foundation 24 Entrance Scholarship
- ABEP International Study Scholarship
- ABEP Mentorship Prize
- ABEP This is My Path Prize

In the Fall Term 2012, our School's self-declared Aboriginal student population was 3.4% of total enrollment, compared to the University of Manitoba average of 7.7%. Thus, we are clearly under-represented compared to the University average and the general Manitoba population.

To provide further context, please see enrollment data for the 2007-2012 period:

Asper School of Business
Registered in B.Comm.(Honours) Program:

Year	Number of Aboriginal Students	Total Student Population	% Aboriginal
2012	59	1742	3.4%
2011	62	1698	3.7%
2010	62	1604	3.9%
2009	59	1637	3.6%
2008	51	1601	3.2%
2007	39	1530	2.5%



The Asper School is committed to increasing the number of Aboriginal students in our school. To this end, we have put in place a number of measures to raise the proportion of Aboriginal students in our faculty. Increasing the number of bursaries, scholarships, and awards directed at Aboriginal students is a critical part of this strategy. These bursaries will provide our school with the opportunity to recruit and retain Aboriginal students at the University of Manitoba. As such, it will continue to help us meet our goal of raising the proportion of Aboriginal students in our faculty.

We are confident that these bursaries will provide an incentive to attract and retain Aboriginal students at the Asper School of Business. We therefore believe that the nature of this award is justifiable.

Sincerely,

A handwritten signature in blue ink, appearing to read "M Benarroch". The signature is fluid and cursive, with the first name "Michael" and last name "Benarroch" clearly distinguishable.

Michael Benarroch

Aboriginal Student Centre

114 Sidney Smith
Winnipeg, MB
R3T 2N2

Phone: 204-474-8850
Fax: 204-275-3142
E-mail: asc@umanitoba.ca



July 10, 2013

Dr Philip Hultin
Chair of the Senate Committee on Awards
c/o Ms. Candace Prejet
Awards Establishment Officer
417 University Centre

Dear Dr. Hultin & Senate Committee,

Please accept this letter as formal support for the establishment of the following bursaries:

- ABEP Awards (Bursaries)
- ABEP Awards (Scholarships)
- ABEP Foundation 24 Entrance Scholarship
- ABEP Mentorship Prize
- ABEP This is My Path Prize
- ABEP International Study Scholarship

All these proposed bursaries and scholarships are valuable and have the support of the Aboriginal Student Centre.

The number of Aboriginal students attending the University of Manitoba continues to increase and I believe it is partially due to the financial assistance made available through initiatives such as this. All the above awards are examples of how the University of Manitoba can support the Aboriginal community by contributing to areas they feel are important and/or show significant underrepresentation. The number of Aboriginal students pursuing a degree in the area of Business at the University of Manitoba is substantially smaller at 3.4% than the overall Aboriginal student population of 7.2%. Given the overall percentage of Aboriginal students is much smaller than our representation in the community (locally, provincially and nationally) I strongly support the need to offer the above proposed scholarship and bursary to assist with the noted underrepresentation.

I trust the Senate committee will approve this award and others like it, in the hopes of increasing the recruitment and retention of Aboriginal students pursuing a degree through the Asper School of Business

In education, miigwetch!

Dr. Bret Nickels
Aboriginal Student Centre



UNIVERSITY
OF MANITOBA

**STUDENT
AFFAIRS**
creating opportunities for student success

Report of the Senate Committee on Nominations

Preamble

1. Since last reporting to Senate on June 7, 2013, the Senate Committee on Nominations (SCN) met on August 1, 2013 (electronically), to consider nominations to fill vacancies on the standing committees of Senate.
2. The terms of reference for the SCN are found on the University Governance website at:
http://umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/507.html

Observation

1. Listed below are committees having vacancies to be filled, along with the names of the nominees being proposed, their faculty/school, and the expiry date of their terms.

Recommendations

1. The SCN recommends to Senate the following list of faculty nominees:

COMMITTEE	NOMINEE(S)	FACULTY/ SCHOOL	TERM END DATE
Senate Committee on Admissions	Prof. Nancy Chow (S) <i>(leave replacement)</i>	Environment, Earth and Resources	2014.06.30
Senate Planning and Priorities Committee	Prof. Richard Lobdell (S)	Arts	2014.05.31

2. The SCN recommends to Senate the following list of student nominees:

COMMITTEE	NOMINEE(S)	FACULTY/SCHOOL	END DATE
Senate Committee on Academic Computing	Mr. Armin Hamta	Graduate Studies	2014.05.31

Respectfully submitted,

Professor M. Edwards, Chair
Senate Committee on Nominations

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses the report to Senate.

Report of the Senate Committee on Academic Dress

Preamble

The terms of reference for the Senate Committee on Academic Dress can be found on the University Governance website at:

http://umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/486.html

wherein the Committee is charged with the responsibility to recommend to Senate on the colours of the linings of hoods for new degrees.

The Committee met on June 10, 2013 to consider stole colours for the following diploma programs:

- Post-Baccalaureate Diploma in Engineering (Faculty of Engineering)
- Diploma in Labour Studies (Extended Education)

Observations

1. As set out in the Committee's Report to Senate dated March 14, 2012, the Senate Committee on Academic Dress approved the establishment of academic stoles for a number of diploma programs since graduates of diploma programs at the University did not have hoods to wear with their gowns at Convocation.
2. The Committee noted that the creation of distinctive stoles for each of the diploma programs provided graduates with a sense of identity at Convocation and acknowledged the significance of their academic accomplishments.
3. The March 14, 2012 report indicated that the Committee would continue to work with a number of faculties to establish colours for stoles for other diploma programs, such as the two noted above.

Recommendations

The Senate Committee on Academic Dress recommends to Senate:

1. **THAT** the colour of the stole for the Post-Baccalaureate Diploma in Engineering be gold with a royal blue braid (as is used in the hood for the Bachelor of Engineering degree).

2. **THAT** the colour of the stole for the Diploma in Labour Studies be smoke (the same colour as for other Extended Education diploma programs, namely the Aboriginal Community Wellness Diploma, the Aboriginal Child and Family Services Diploma, and the Aboriginal Environmental Stewardship Diploma).

Respectfully submitted,

Prof. Paul Hess, Chair
Senate Committee on Academic Dress

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses the report to Senate.